CONFIDENTIAL
FOR INTERNAL USE
PUBLIC UPON APPROVAL

INTER-AMERICAN DEVELOPMENT BANK
IDB LAB

MÉXICO

EcoMicro 2.0 / EcoMicro – AI-powered Decision and Finance support for Climate Resilience in Mexico

ME-G1028
ECOMICRO 2.0 FACILITY (RG-O1698)

& ME-T1498
ECOMICRO PROGRAM FACILITY (RG-O1649)

PROJECT DOCUMENT

This document was prepared by the project team comprised of: Team Leader, Ruth Houliston (DIS/CBA), Tatiana Virviescas (DIS/CME), Laura Fernandez (DIS/CBA), Fermin Vivanco (MIF/MSM), Nayaatha Taitt (DIS/CBA), Juan Pedeflous (FML/LAB), Goritza Ninova (ORP/GCM), Nicolas Moreno (ORP/GCM), Miguel Aldaz (ORP/PTR), Galia Rabchinsky (DSP/DVF)

CONTENTS

PROJECT SUMMARY

EcoMicro 2.0/EcoMicro AI-powered Decision & Finance support for Climate Resilience
ME-G1028 & ME-T1498

In Mexico the rural and peri-urban poor play a crucial role in their country's economies and food production. At the same time, they are most at risk of being affected by adverse climate change impacts such as droughts, floods, storms and frosts causing harvest losses and income reduction. These impacts aggravate poverty and gender imbalances. Even though these populations partly implement climate solutions (e.g., water retention techniques, fertilizers and biodigesters), they lack access to suitable financial products. Women even more so struggle to receive access to suitable climate resilience enhancing financial products.

YAPU Solutions is a globally operating fintech that builds solid Resilience Finance portfolios, becoming a market leader in offering software and knowledge to financial institutions. YAPU provides an easy entry into digitization and improving risk management and has supported the disbursement of US$80 million for resilience finance in Latin America and Africa.

The objective of this project is to develop and pilot an Artificial Intelligence (AI) powered data tool to microfinance and finance institutions in Mexico for first time. Enabling them to deploy climate smart financing for producers and microentrepreneurs in rural and peri-urban areas, integrating gender-based and suitable adaptation solutions, and thus increasing their resilience to climate change. To reach this goal, YAPU will partner with ProDesarrollo AC, the leading microfinance network in Mexico, to train and pilot the solution in eight financial institutions. The project aims to benefit 4,800 people (50% women) as loan recipients that have increased adaptative capacity by verified and monitored adopted adaptation solutions, out of which at least 80% account for rural areas of prioritized states.

While YAPU's front-end resilience finance solutions have been tested successfully with more than 30 institutions globally, the back-end structure is mainly working with expert-based scoring models. These are to be replaced by AI and Machine Learning (ML), to increase the predictive power of the scores and improve climate risk management and adaptation solutions recommendations to end-clients. Through this project YAPU will: 1) support the structuring of a resilience finance taxonomy in alignment to the National Adaptation Plan of Mexico; 2) provide capacity building for financial institutions; and 3) develop an AI engine that will increase understanding of site- and activity-specific climate risks and how to mitigate them via resilience investments.

The project contributes to IDB Lab Business Plan 2022-2023 and IDB Mexico Country Strategy 2019-2024 strategic goals, especially by strengthening the national financial system and increasing the climate resilience of rural populations.

This project is made up of two complementary operations: **ME-G1028**, the first project to be funded under EcoMicro 2.0 Climate Resilience through Deep Tech Acceleration in the Caribbean Basin Facility (RG-O1698)[1]; and **ME-T1498,** the thirtieth project to be funded under the EcoMicro Facility (RG-O1649)[2].

1 The EcoMicro 2.0 (RG-O1698) Facility's main objective is to support economic reactivation in the Caribbean Basin post COVID-19 by catalyzing deep innovation in broad-based ClimateTech to transform the way in which key economic sectors and systems reorient towards a resilient, greener, and sustainable economic recovery.

2 The EcoMicro (RG-O1649) Facility's objective is to build capacity of financial intermediaries to deploy new green finance products that build climate resilience of MSME and smallholder famer clients.

ACRONYMS AND ABBREVIATIONS

AI	Artificial Intelligence
API	Application Programming Interface
BEO	Bank-Executed Operation
CBA	Country Office in Barbados
CIAT	International Center for Tropical Agriculture
CGIAR	Consultative Group for International Agricultural Research
CME	Country Office in Mexico
COF	IDB Country Office
CRIG	Contingency Recovery Investment Grant
CSD	Climate Change and Sustainability Division
DICI	Assessment of Integrity and Institutional Capacity
EA	Executing Agency
FI	Financial Institution
GDP	Gross Domestic Product
IDB	Inter-American Development Bank
IDB Lab	Multilateral Investment Fund
IDBG	Inter-American Development Bank Group
LAC	Latin America and the Caribbean
MFI	Microfinance Institution
MRV	Monitoring Reporting and Verification system
MVP	Minimum Viable Product
NAP	National Adaptation Plan
NDC	National Determined Contributions
NDF	EcoMicro Nordic Development Fund
NRTC	Non-Reimbursable Technical Cooperation
PC	Project Coordinator
PFI	Partner Financial Institution
PPCR	Pilot Project for Climate Resilience
PSR	Project Status Report
SPV	Special Purpose Vehicle
TC	Technical Cooperation

PROJECT INFORMATION

MEXICO

EcoMicro 2.0 / EcoMicro – YAPU Solutions GmbH
AI-powered Decision and Finance support for Climate Resilience

ME-G1028 & ME-T1498

Country	Mexico		
Executing Agency:	YAPU Solutions GmbH		
Focus Area:	Agriculture & Natural Capital		
Coordination with Other Donors/Bank Operations:	This project comprises two operations (i) ME-G1028 a Contingent Recovery Grant under the EcoMicro 2.0 Climate Resilience through Deep Tech Acceleration in the Caribbean Basin (RG-O1698) Facility, financed by the Pilot Project for Climate Resilience (PPCR), and (ii) ME-T1498 a Non-Reimbursable Technical Cooperation under the EcoMicro Facility (RG-X1131), funded with resources of the Nordic Development Fund (NDF) contribution (ATN/NV-13162-RG)		
Project Beneficiaries:	4,800 people from vulnerable communities (microentrepreneurs and smallholder farmers), at least 50% women		
Budget:	Counterpart (cash and in-kind):	US$512,150	50%
	ME-G1028 Contingent Recovery Investment Grant (CRIG) funded with resources from the Pilot Project for Climate Resilience (PPCR):	US$361,800	35%
	ME-T1498 Non-Reimbursable Technical Cooperation (NRTC):	US$ 150,000	15%
	TOTAL PROJECT BUDGET:	**US$1,023,950**	**100%**
Execution and Disbursement Period:	The expected execution period for this Project is 30 months and the expected disbursement period is 36 months. For ME-G1028, the Repayment Period begins after month 30, once the execution period ends. It will have a duration of 72 months from project signature (42 months after execution period)		
Special Contractual Conditions:	Special conditions precedent to the first disbursement will be: (i) Signed Agreement between the EA and ProDesarrollo AC.		
Environmental and Social Impact Review	This operation was screened following the Environmental and Social Policy Framework (GN-2965-21) on 29th July 2022. The project has been classified as C, considering that the support of the development of an AI-powered data tool would have minimum social or environmental negative impacts.		
Unit responsible for disbursements	COF Mexico (CME). The project will be supervised by the IDB Lab Specialist in the Mexico Country Office (CCB/CME), in coordination with the IDB Lab EcoMicro Coordination Team within the Barbados Country Office (CCB/CBA).		
Non-objection	The letter of non-objection to the project from the Government of Mexico on the 29th of August of 2022.		

I. INTRODUCTION

1.1. **ME-G1028** is being financed under **EcoMicro 2.0 Climate Resilience through Deep Tech Acceleration in the Caribbean Basin RG-O1698 (EcoMicro 2.0):** a US$953,000 facility established to support economic reactivation in the Caribbean Basin post COVID-19 by catalyzing deep innovation in broad-based climate technology solutions to transform the way in which key economic sectors and systems reorient towards a resilient, greener, and sustainable economic recovery.

1.2. **ME-T1498** is being financed under **EcoMicro The "Green Finance for Micro, Small and Medium Enterprises (MSMEs) and Low-Income Households: The EcoMicro Program"** MIF-AT-1143 (EcoMicro) is a US$17 million facility established to pilot green finance for MSMEs (including small farmers) and low-income households in Latin America and the Caribbean (LAC). The goal of the Program is to facilitate green finance as a means to increase access to Renewable Energy/Energy Efficiency (RE/EE) products, and to assist in adaptation to climate change. The purpose of the facility is to support Financial Intermediaries (FIs) in collaboration with key actors in the broader ecosystem to provide new finance instruments to capitalize on opportunities in green financing, while adjusting their risk management models to climate change risk and incorporating climate impact assessment into their internal policies and operations.

1.3. EcoMicro 2.0 / EcoMicro Facilities are administered via the EcoMicro Coordination Unit, led by the IDB Lab Discovery Team based in the IDB Country Office in Barbados. This project will be supervised by the IDB Lab team in the Mexico Country Office (CCB/CME) supported by the EcoMicro Team in the Barbados Country Office (CCB/CBA), in keeping with EcoMicro 2.0 / EcoMicro administrative arrangements.

1.4. Projects under the EcoMicro 2.0 (RG-O1689) are approved by the IDB Lab General Manager who is authorized to do so by PR-501. Projects under EcoMicro (RG-O1649) are also approved by the IDB Lab General Manager, according to the Delegation of Authority provided by the IDB President under the EcoMicro facility approved by the Donors Committee by Resolution MIF/DE-33-11 adopted on September 20th, 2011 (MIF/AT-1143-2).

1.5. ME-G1028 is the **first EcoMicro 2.0 project**, financed with resources from the Pilot Project for Climate Resilience (PPCR) under RG-O1689. This will be complemented by ME-T1498 the **thirtieth EcoMicro project** under RG-O1649, and the eleventh operation financed with resources under the Nordic Development Fund (NDF) contribution to EcoMicro (ATN/NV-13162-RG) under RG-X1131.

II. THE PROBLEM

B. Problem Description

2.1. In Mexico, the rural and peri-urban poor play a crucial role for the country's economy and food production. According to official data presented by the National Council for the Evaluation of Social Development Policy (CONEVAL), poverty affected 55.3% of the total population in rural areas, corresponding to 17 million people, while in the urban area, this percentage was lower (37.6%), that is, 35.5 million people. The project will prioritize interventions in states that account for the greatest rural

poverty[3], including Chiapas (85.2%), Guerrero (76.6%), Oaxaca (73.8%), Veracruz (71.4%), Puebla (60.9%), Tabasco (56.4%), Campeche (56.9%), Quintana Roo (53.4%), and Yucatan (39.3%).

2.2. **Climate vulnerability.** Climate change exposure is most predominant in rural areas where crop production is the main economic activity. As a result, vulnerability of rural communities is higher than in urban areas. Rural communities are affected by a manifold of threats such as severe droughts, land erosion and landslides, wildfires, and floods, all of which work together to hold the sector back. According to the Global Facility for Disaster Reduction and Recovery (GFDRR), almost every region in the country under the high-risk category will suffer from most of the possible climate hazards. With the exception of Aguascalientes, all of Mexico's other 31 states are listed as under at least medium or high threat of suffering from floods (either river, urban or coastal) in the next decade. Water scarcity is already affecting some regions as of today, and for the large majority of Mexico, droughts are expected within the next five years. Given that 55% of its territory is agricultural land, Mexico is the third country with faster rates of deforestation globally, only behind Brazil and Australia. Currently, 36.3% of agricultural lands depend on smallholder farmers, who are among the most climate vulnerable. Crop production contributes 58% of the total value of agriculture sector production and 42% of total income – representing a significant employment rate of 7.6 million people. These adverse impacts aggravate poverty and gender imbalances.

2.3. According to the UN, women and girls are among the most vulnerable groups that are unequally affected by the climate crisis and disasters, with women accounting for 80% of people displaced by climate-related disasters. Although women are important and active land users and laborers, they are often not discursively considered as farmers due to the lack of formal employment, lack of access to land tenure or productive inputs. Therefore, women are trapped in a pattern of holding low-paying informal jobs and low-productivity businesses. In these terms, in Mexico, officially only 11% of the female workforce employed by the agriculture sector (WB, 2020). Additionally, in Mexico, 73.5% of unpaid domestic and care work carried out in households is produced by women, however only 49% of women participate in economic activity compared to 75% of men. This lack of economic participation was exacerbated by the COVID-19 pandemic, since Mexican women accounted for 2 out of 3 jobs lost (INEGI, 2020).

2.4. Climate adaptation solutions[4] such as resilient housing or drip irrigation systems have been identified as cost-effective adaptation solutions. Even though these populations partly implement climate solutions (e.g., ancient water retention techniques, family gardens), their uptake is limited due to lack of adequate access to assets, such as land, credit, technology and agricultural inputs, and participation in decision-making and training. Despite the importance of the microfinance sector in Mexico, rural areas have a less access to the financial sector and to credit in general. It is estimated that only 9.8% of the population in rural areas contracted a loan or used a credit card in 2017 (Global Findex). Therefore, MFIs and FIs in these states can play a crucial role in increasing clients' resilience.

2.5. **Resilience finance** entails any financial product or service that has the potential or the aim to enable, promote or secure investment into a system's or individual's resilience to external shocks and changes in one of the core resilience dimensions (climate, nature, health, macroeconomy). Resilience finance is deemed to be the highest performing triple bottom line investment category, since it: i) provides

[3] CONEVAL, 2018. https://www.coneval.org.mx/Medicion/MP/Documents/PATP/Pobreza_rural.pdf

[4] An **adaptation solution** consists of the identification of specific recommendations to smallholder farmers on what adaptation measures to focus on, by increasing productive and adaptative capacities via access to suitable technologies and assets, or application of best sustainable practices. Adaptation solutions can be broadly understood to include ecosystem-based adaptation or nature-based solutions, as defined as the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change (Convention on Biological Diversity, 2009). Some adaptation solutions are targeted at individual household or farmer level, while others require organization at a landscape management level. Some examples of adaptation solutions are use of organic fertilizers or biodigesters, adoption or agroforestry systems, etc. (See MEbA catalogue, "Microfinance for Ecosystem Based adaptation")

attractive financial returns for investors; ii) generates outstanding social returns by financing adaptive capacity, especially vis-a-vis climate change, health risks and biodiversity degradation; and iii) generates the highest environmental returns by promoting specifically adaptation solutions that strengthen ecosystems and the services they provide as co-benefits. However, FIs do not have sufficient know-how and capacities to serve vulnerable populations, and even less so in providing fit-for-purpose efficient resilience finance. In comparison to business-as-usual and traditional financing options, resilience finance will always require more effort from FIs as policies and procedures need to be adjusted, internal capacities need to be built, and as needs arise to handle customer related production and climate questions.

2.6. Founded in 2017 in Germany, YAPU supports FIs through digital tools, data insights, and investor services, enabling more clients to pursue economic empowerment and social development while seeing and decreasing negative impacts of climate change. YAPU leverages knowledge, technology and partnerships built on past programs (see 6.5 for details) and is in an outstanding position in the field of supporting and promoting Resilience Finance. With years of experience in several African (Benin, Sudan, Burkina Faso, Senegal) and Latin American countries (Ecuador, Colombia, Peru, Costa Rica, El Salvador and Dominican Republic), YAPU has harnessed invaluable capacity of getting resilience into motion. To date, it has disbursed 80 million USD to adaptation solutions. Winners of the GEF Challenge Program for Adaptation Innovation, BNP Paribas and Grameen Credit Agricole Foundation, have also recently chosen YAPU as implementing partner. These recognitions led them to launch in 2021 the Scale for Resilience initiative[5] which focuses on addressing the financial value chain to create conditions and digital tools to finance adaptation solutions. YAPU's Scale for Resilience initiative is part of the United Nations Framework Convention on Climate Change (UNFCCC) High Level Champions' Race to Resilience campaign.

2.7. In 2021 and early 2022, YAPU conducted an *Artificial Intelligence Feasibility Study*, commissioned by the German Government, to explore self-learning algorithms to address data-based risk management in microfinance, having recognized the following challenges in the sector:

i. **Limited application of Information and Communication Technology.** Despite the efforts in the last years, most FIs in Mexico still lack comprehensive and digital Monitoring, Reporting and Verification (MRV) systems. Combined with a wide-spread lack of consistent regulation, many institutions have not defined a clear vision to digitalization, prioritizing price over quality, and facing barriers to innovation.

ii. **Inefficient access to end-customer data.** FIs often present inefficient, non-digital processes of client data gathering, with excessive operational expenses. This not only increases the cost of financial services, but generates a high credit risk, due to a multitude of factors that are not being analyzed.

iii. **Lack of awareness on climate risks and adoption of mitigation strategies**. Resilience to climate change is geared towards the alignment of ecosystems with productive systems. The more adapted, the lower the risks, and the more attractive it is for the financial system to serve. However, FIs lack a structured view and strategy to analyze climate risks.

[5] In partnership with Consultative Group for International Agricultural Research (CGIAR), Gawa Capital, the International Center for Tropical Agriculture (CIAT). The initiative aims to make vulnerable populations, like smallholder farmers, more resilient by providing them access to Nature-based Solutions (NbS). The objective is to increase awareness and solutions to increase Resilience finance, pledging to make 3 million smallholder farmers more resilient by 2030. Scale for Resilience is part of the UNFCCC High Level Champions' Race to Resilience campaign, throughout is accessing to data, experts and resources

iv. **Limited access to suitable adaptation solutions**. In Latin America, the implementation of adaptation strategies at the local level is difficult. Despite the level of research and knowledge in the field, only a handful of approaches aimed at achieving this goal by real adoption by smallholder farmers.

v. **Lack of alignment of finance and National Adaptation Plan (NAP)**. It is estimated that investments totaling US$124 billion (10% of GDP) will be needed for Mexico to meet its NDC, and the long-term horizon for this process is a challenge given the country's relatively small, short-term oriented financial system (IDB's Mexico Strategy 2019-2024). Recent ventures are emitting over US$ 10 billion in green bonds in Mexico and developed a partnership to develop a green taxonomy[6] in line to the NAP. The microfinance sector it still missing in such endeavors, and the current product and services offer is not aligned to national plans.

vi. **Limited funding for resilience finance**. Despite the growing interest and availability of funding for "green finance" and gender approaches, there is still a gap to make funds tangible and flowing to the end beneficiaries, especially concessional funding through blended finance approaches, due to high-risk perceptions and a lack of investable projects or specialized financial intermediaries.

III. THE INNOVATION PROPOSAL

B. Project Description

3.1. The objective of the project is to develop and pilot an AI-powered data tool to enable microfinance and financial institutions in Mexico to make climate smart financing decisions that ensures end-clients (producers and microentrepreneurs in rural and peri-urban areas) integrate locally appropriate, gender-based adaptation solutions, and thus increase their resilience to climate change.

3.2. **Solution*:*** In this project, YAPU will design, develop, and pilot AI-powered decision engine, and build capacity of FIs, to enable them to deploy financing that will increase resilience of end-clients, by recommending adaptation solutions suited to most vulnerable communities. The AI solution will reduce the complexity of resilience financing for FIs, supporting financial decision makers within FIs to provide resilience loans to the most vulnerable to climate change. The AI solution will create insights into the most suitable and successful adaptation solutions for a given client's climate risk profile.

3.3. Risk indicators play a crucial role within a FIs risk management framework. Depending on their risk appetite, and their ability to mitigate certain risks, financial institutions typically formulate thresholds for specific risk indicators within their internal risk policies. During decision-making on a loan application from an end customer, Credit Committee (CC) members typically compare risk levels calculated for specific risk indicators with client thresholds. AI support for better insight into these risk indicators is crucial, as it will enable client institutions to better measure risks and take informed credit decisions.

3.4. The proposed solution will introduce an *AI-driven verification system*, based on self-learning algorithms, that links end-customer performance to actual climate reality, either directly (climate-productivity) or via a proxy (climate-loan performance), increasing understanding of site- and activity-specific climate risks and how to mitigate them via resilience investments. The AI-powered data tool will enable FIs to integrate climate resilient practices into their loan making processes, building their awareness and capacity to identify, implement climate smart financing decisions and finance resilience investments

[6] The **taxonomy** defines objectives to be pursued and conditions to be fulfilled to define the eligibility of specific investments to be counted as resilience investments. The objectives are to increase climate resilience, nature resilience, health resilience, and socio-economic resilience. The conditions seek to support at least one objective, not harm any other objective, ensure basic safeguards (human rights, child behavior, gender equity), and comply with basic technical verification criteria. As a result, the taxonomy gathers a catalogue of adaptation solutions according to objectives and conditions.

that that ensure end-clients integrate locally appropriate technologies and measures that will build their resilience. The long-term impact is that FIs will have a better service offering that increases climate resilience and adaptive capacity of smallholder farmers in Mexico combined with access to finance.

3.5. The project will support the following key interlocking interventions:

i. Develop and pilot a **Minimum Viable Product (MVP)** of this AI-powered tool in Mexico, in partnership with ProDesarrollo. A.C, the largest network of microfinance institutions and largest development finance institution for smallholder finance in Mexico. The MVP will be piloted with 9 Participating Financial Institutions (PFIs) selected from ProDesarrollo's network of 62 microfinance institutions. The AI-data model to be developed by YAPU is an evolution of its Data Service, YAPU's core product, which is an MRV tool that enables a credit scoring on climate risks, which enables MFIs and FIs to introduce optimal combinations of sustainable practices that increase climate and resilience. Under this project, YAPU will expand the Data Service model to include an AI and machine leaning engine for enhanced data-based climate risk management, building on a 2021 AI Feasibility Study conducted by YAPU with funding from the German Government (see 2.7). The AI-tool MVP will be defined in line with customer feedback and data gathering of eligible resilience finance taxonomies building on existing frameworks elaborated by YAPU under past projects (see 6.5), and in coordination with national efforts towards developing a green taxonomy for the financial system in Mexico[7] as well as by leveraging key expertise, partners, data, knowledge, and YAPU resources and its partners. See Annex IX for details.

ii. **Build institutional capacities of FIs to proactively drive resilience finance for the vulnerable communities**. YAPU will contract ProDesarollo as their PFI capacity building expert, impact, and field partner. One of ProDesarollo's key roles will be to train to build capacity of PFIs to uptake the software for scalable front-office usage, and alternatively Application Programming Interface (API) integration for FIs that are already operating digitally. Training of FIs will build on YAPU's *Path to Resilience methodology*[8], which provides a graduation model enabling FIs to enter the training pathway tailored to their current business practices, enabling them to improve according to the requirements of the next level, finally championing resilience finance in line with national adaptation policies. The PFIs participating in the pilot phase will deploy the AI tool and receive capacity building, exiting the pilot once they reach at least stage five in the Path to Resilience model. At this stage they will offer resilience finance products and services, including the integration of a recommendation system to guide clients in increasing their adaptive capacity and promote identified "best practice" solutions.

iii. **Build impact measurement and knowledge sharing to ensure best possible financial, environmental and social returns for vulnerable communities – by applying gender approaches.** From the learnings of the application of the AI tool and the implementation of adaptation solutions in the field, the project aims to evolve the Path to Resilience methodology beyond its application to financial institutions to integrate end-clients (women/men owned

[7] GIZ Mexico in collaboration with the Association of Mexican Banks (ABM) are working towards a "Green Taxonomy for the Mexican Financial System" the framework for which was presented to an audience of ABM associates and relevant actors of the financial sector in October 2020.

[8] The first dimension refers to traditional microfinance practices, where problem loans are usually only detected once they fall into arrears, the subsequent dimensions seek the transition to a proactive climate risk management. In the "disclosure" dimension, financial institutions disclose their Gross (stage 1) or even Net (stage 2) climate risks, primarily focusing on physical climate-related financial risks. Gross or inherent climate risk refers to the climate risk of an economic activity or investment project according to its location ("climate threat exposure") and the actual activity ("climate threat sensitivity"). The Net or Residual Climate Risk factors in mitigating factors such as the application of best agricultural practices or the existence of adaptation solutions ("adaptive capacity"). The third dimensions – "promotion" – includes the establishment of business continuity and contingency plans within internal policies and procedures (stage 3), the offering of specific resilience finance products and services (stage 4), the expression of recommendations to end customers to increase the adaptive capacity (stage 5) and ultimately the integration and alignment with the national Climate Change and Adaptation strategies and plans (stage 6).

businesses/productive activities). A Path to Resilience for end-clients will define the process of increasing resilience capacities, by accessing resilience finance and implementing verifiable adaptation solutions. The objective will be to guide the definition specific implementation, monitoring and measurement strategies, applying gender-based approaches and associated graduated capacity building. The adapted Path to Resilience for end-clients will be factoring in observed realities and underlying economics of proposed models for end-customers.

3.6. **Business Model:** The AI product will be marketed as a YAPU data service and is foreseen to be charged per analysis and recommendation that the loan officers run during their loan assessment process. The foreseen price per analysis of the credit risk scoring is US$2 while the recommendation is priced with US$3. An MVP will be piloted in phases with eight PFIs from the ProDesarrollo network, starting with an initial three in the development phase. The project will focus on a B2B model, aiming to provide portfolio origination, administration, and certification services for FIs. However, B2C and business-to-donor/investors services will also be explored, especially for the consideration of studying models and innovative schemes for resiliency finance. The targeted outcome is to align donors, investors, and investment managers to increase the flow of finance towards FIs to scale resilience finance.

3.7. **Gender Plan:** There is little knowledge on how FIs globally respond to mitigating climate impacts for its female clients. Under this project, YAPU will develop a transversal Gender plan applying gender-based approaches to every dimension of the AI model. It will be elaborated during the preparation phase in collaboration with ProDesarrollo. The gender plan considers key questions[9] aligned with the three dimensions of the model:

i. **AI technology design**:

- **Taxonomy definition and verification criteria**: the catalogue of adaptation solutions in the taxonomy definition for resilience finance will include gender-focused adaptation solutions. The technical verification criteria, economic analysis, crop management, marketing materials will be adapted to local gender context.

- **Robustness of the tool**: the design of the AI engine will be conceived to analyze climate impacts by gender. On this specific action, YAPU will receive support from gender experts of fAIr LAC[10] team to eliminate biases and secure fairness design of the technology.

- **Data gathering**: Gender-specific enquiry protocols will be designed to gather information for a better understanding about female and male economic activities and how climate change poses differentiated impacts to both groups, this will be critical in the taxonomy definition of taxonomy and AI solution design.

ii. **Build FI capacities:** To train and raise awareness among PFIs' management and loan officers, YAPU will train ProDesarrollo, who will adapt its proven capacity development methodology already applied for financial education and inclusion, with gender approaches. YAPU and ProDesarrollo will adapt all training materials to be gender-focused, considering differences on impacts and opportunities to increase equitable participation.

[9] The Gender Plan aims to solve the following guiding questions: i) in terms of risk management: How do climate risks specifically impact female clients, their economic activity and livelihoods? How exposed are female clients to climate risks? Which female led agricultural activities are most sensitive to climate change? How do female clients manage these risks? ii) in terms of adaptation: Which adaptation solutions are most suitable for female led agricultural activities? How can the AI-driven decision support for PFIs help understand the aggregated impact on an increase of the adaptive capacity for female led agriculture?

10 IDB Lab's fAIr LAC is the largest alliance for ethical and responsible use of technology. fAIr LAC deploys inter-alia diagnosis tools to build capacity of startups to ensure algorithmic fairness and justice in AI solutions

iii. **Build impact measurement:** An impact measurement and management methodology will be defined to support the implementation of adaptation solutions in the field, applying gender approaches, and following the concept of Path to Resilience for end-clients promoted by the project. The specific objective will be to define a method to measure the increase of resilience capacities of men and women, by the verification of the implementation of adaptation solutions, considering the most suitable solutions to be applied by women. To define this method, ProDesarrollo and YAPU will consider existing and proven gender impact indicators and leverage on YAPU's verification system of adaptation solutions.

3.8. **Innovation**. The project is innovative as it will develop and test an AI powered climate tech-solution in Mexico for first time and promote resilience finance under gender lens. These innovations are in alignment with the objectives of both EcoMicro 2.0 **/** EcoMicro, which jointly seek to build capacity of FIs and harness deep-tech to enhance green/climate finance that builds climate resilience of MSMEs and smallholder farmers. The following are the project main innovations:

i. **New deep climate-tech solution for climate risk-management piloted in Mexico.** The AI solution will evolve YAPU's existing Data Services (see 2.5.i) to reduce complexity and support FIs to define and provide resilience loans to vulnerable communities affected by climate change. Worldwide there are only approximately 10 startups[11] operating in this area, however YAPU's solution is differentiated in that its focus is on scaling resilience finance as a driver to increase resilience of the most vulnerable, while other startups focus on agricultural management and productivity.

ii. **Resilience Finance Taxonomy for Mexico.** Under this project, YAPU will develop a taxonomy and catalogue of adaptation solutions suitable to PFI end-clients (the project beneficiaries) based on the Mexican climate, productive, economic, and social-gender context. YAPU will achieve this by leveraging its prior contributions to UN Microfinance for Ecosystem Based Adaptation (MEbA) [12], accessing a catalogue of 40 global adaptation solutions; and accessing the International Center on Tropical Agriculture (CIAT) global catalogue of solutions, data on crops, climate, and best practices, (etc.). The resilience finance taxonomy will feed the AI engine, i) including a catalogue of specific adaptation solutions for women-led MSMEs/smallholder farmers; ii) adapting and enhancing the green microfinance product offering of PFIs, iii) contributing to the Mexican NAP and NDC progress, by aligning and disseminating the taxonomy developed with National and sub-National governments, positioning ProDesarrollo and PFIs as promoters of resilience finance; and iv) defining technical verification criteria to assess the impact of the deployment of solutions in the catalogue.

Project implementation will be structured in 3 components:

3.9. **Component 1: Preparation, Data gathering and Capacity building (ME-T1498 US$77,000, ME-G1028 US$84,000, Counterpart US$151,500).** The main objective of this component is to develop capacities and build local ownership. This will be achieved by establishing and/or enhancing the capacity of FIs participating in the pilot and gathering data to design the AI-tool. ProDesarrollo, in

[11] AgroCenta, Agroclimatica, Cropin, eKutir, Harvesting, IncluirTec, InQube, Koltiva, Manobi Africa, QLana, etc. They are located across many regions, including Latin America (i.e., Agroclimatica, IncluirTec) and their use of AI is assumed to be related, although not necessarily the exact same application. For the better part of the pool of companies, the main direction of the application is towards enhancing productivity, while YAPU's centering in the concept of resilience.

[12] The MEbA project has identified more than 40 adaptation solutions that allow small-scale farmers to invest in activities related to ecosystem sustainability, improving their income and resilience towards climate change effects. The Taxonomy criteria looks to i) reduce pressure on ecosystems and the services they provide; ii) Enhance the social or economic resilience of human populations vulnerable to climate change; iii) Reduce risks associated with climate events in production activities; iv) In their implementation, protect, restore or use biodiversity and ecosystems in a sustainable manner, and v) Have a positive impact on individuals' economy in the short term (MEbA, 2021).

collaboration with YAPU will initially onboard 3 PFIs, following which ProDesarrollo will onboard another six PFIs autonomously. A total of 9 PFIs will participate in the pilot. See Annex IX for details on the procedure and selection criteria for PFIs. The activities considered are: 1) Preparation phase: development of detailed implementation plan, including definition of the Path to Resilience for end-clients (see 2.5 (ii)), and gender plan; selecting and engaging the PFIs and conducting fAIrLAC training and including design recommendations; 2) Inception Phase: securing compliance with legal and regulatory requirements and conduct PFIs certification; 3) Data Gathering: access PFI data on end-clients, mainly via existing portfolios based on an initial iteration of the resilience finance taxonomy and interviews, 4) Capacity building: implement the Path to Resilience framework, training PFIs on resilience finance, which includes general climate risk disclosure and management concepts, product design considerations for the taxonomy, as well as use of the initial iteration of the YAPU Resilience Finance platform. This initial version will display only expert-based recommendation options – later these will be replaced by the AI-tool. The key results of this component are: i) 9 PFIs participating in the pilot that are portfolio certified by YAPU; ii) 17,000 data sets gathered from end-customers, according to AI design, taxonomy and gender plan, iii) 150 adaptation solutions compose the resilience finance taxonomy aligned to the Mexican NAP and NDC (including 5 women-led solutions), iv) ProDesarrollo adopts the Path to Resilience concept as part of yearly network benchmarking.

3.10. **Component 2: Development, piloting and adoption of AI powered decision making (ME-T1498 US$32,000, ME-G1028 US$202,000, Counterpart US$166,000).** This component focuses on the actual AI code development to deploy and pilot an MVP within the PFIs participating in the project. This component will be mainly led by YAPU with facilitating support from ProDesarrollo. The activities are: i) AI algorithm development, ii) AI training and deployment preparation, iii) AI piloting, iv) monitoring and evaluation, including the application of impact measurement and management methodology that integrates a gender-based verification process of YAPU data services, as a secondary check on top of PFI's, to check loan verification and adoption of adaptation solutions in the field. As a result of the pilot, at least eight PFIs have tested the AI solution, having graduated to step 5 out of 6 on the Path to Resilience *(see 2.5.ii)*. *The key results of this component are: i) AI prototype ready for testing, including fAIrLAC recommendations on fairness design and monitoring; i*i) at least 11,833 loans are analyzed applying the AI solution (MVP), ii*i*) 7,928 recommendations of adaptation solutions and best practices are provided to loan applicants, i*v*) 4,970 loans are disbursed (approximate total volume of US$1.7 million) for adaptation solutions that are verified by a combination of PFIs M*anagement, Reporting and Verification (M*RV*) systems,* and gender-based verification system of YAPU Data Services.

3.11. **Component 3: Outreach and Awareness to scale resilience finance (ME-T1498 US$21,000, ME-G1028 US$30,000, Counterpart US$92,000).** This component focuses on scaling-up a fully-fledged and marketable product as a result of the initial MVP refinements and enhancements. The activities are i) Product development and marketing, ii) Planning of expansion of AI services, iii) Final evaluation of the project, iv) Knowledge dissemination. As a result, a strategy paper will be available, including recommendations to roll out in other markets, including the business model canvas and theory of change, and the AI solution proven hypothesis and product assessment. Additionally, the delivery and dissemination of project case studies produced by YAPU and ProDesarrollo.

3.12. **Project Management/Administration (ME-T1498 US$20,000, ME-G1028 US$45,800, Counterpart US$102,650).** Project management activities will include the assignment of an overall Project Coordinator, establishment of a Project Execution Unit within ProDesarrollo, and ongoing financial administration of project resources. Project Management will follow an iterative and agile project management process which is the central cornerstone within which YAPU currently approaches development and implementation of complex software - and data solutions (see Technical Annex IX for details). This approach will allow YAPU to manage change at the level of PFIs, and to ensure that necessary inputs, namely data, can be gathered in sufficient amounts and quality. Finally, agile product development permits iterative learning and continuous evolution of AI modelling.

3.13. **Access to data strategy**. In order to ensure efficient access to data (which is generally the most substantial challenge for AI development), YAPU will simplify PFIs digital integration (with interfaces and manuals to be provided), enabling access to data on end-customer performance, implementation of adaptation solutions and productive results. In addition, YAPU has identified third parties' data sources, and established partnerships to enable access. See further details in Technical Annex IX).

C. Project Beneficiaries

3.14. **Partner Financial Institutions (PFIs).** The direct beneficiaries of this project are the PFIs, selected by YAPU in coordination with ProDesarrollo, following a pre-defined eligibility criterion (see Technical Annex IX). Independently of its size, PFIs will be selected considering their commitment and capacity, assessed by YAPU's institutional analysis and portfolio certification activities as successfully applied in reference programs. The project will seek to prioritize PFIs serving rural areas of states of Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo, Tabasco, Veracruz y Yucatán. The project will train and increase awareness of resilience finance of managers and around 1,000 loan officials of PFIs, targeting that at least 250 of those loan officials to become active users of the solution. It is aimed that AI-powered decision-making of at least 10 loan transactions per active user per month.

3.15. These numbers are feasible, considering ProDesarrollo' s vast network of 62 FIs. Among the network, larger institutions account for 250,000 clients and 1,400 loan officers on average, medium entities have 14,000 and 130 loan officers on average, while the smaller ones have 3,000 and 20 loan officers on average. A loan officer typically has a portfolio between 170 to 210 clients, disbursing an average of 41 loans per month. The average outstanding loan size is US$552, despite entities' sizes. The expected amount of resilience finance loans for adaptation solutions is between US$330 and US$550.

3.16. **Vulnerable communities and gender.** Vulnerable communities, comprised mainly of smallholder farmers and microentrepreneurs of rural and peri urban areas, are the focus and primary beneficiaries of resilience finance to be deployed under this project. They are the end-customer clients of the FIs, and dependent on adaptation to climate change to sustain their livelihoods overtime. The rural sector in Mexico is relatively small in importance compared to other activities (3.8% of GDP), and thus it perpetuates income differences, with agrarian GDP per capita being US$2,098, merely a fifth of the national figure. This is exacerbated in the prioritized states, which are the least developed of Mexican regions, with 6 states (Puebla, Tabasco, Veracruz, Oaxaca, Chiapas and Guerrero, in that order) ranking amongst the 8 lowest average wages in the country. Guerrero, with the lowest average (formal) salary, has a monthly average of MX$8,832 (approx. US$440), less than half of what is found in Ciudad de Mexico (Observatorio Laboral, 2021). According to the World Bank, gender differences in market, labor and institutional failures can generate a potential loss of up to 25% of income per capita in comparison to men. According to CONEVAL[13], in Aug. 2022 the poverty line in Mexico, based on income average per person in rural areas, is less than MX$3,000 (approx. US$150).

3.17. This project will seek to directly benefit more than 2,400 women[14] and 2,400 men as loan recipients that have increased adaptative capacity by verified and monitored adopted adaptation solution, out of which at least 80% account for rural poverty (according to CONEVAL "Linea de Pobreza Rural pro-ingresos") in prioritized states. Assuming five people per household, the project could benefit more than 25,000 people indirectly.

[13] El Consejo Nacional de Evaluacion de la Politica de Desarrollo Social https://www.coneval.org.mx/Medicion/MP/Paginas/Lineas-de-Pobreza-por-Ingresos.aspx

[14] This gender ratio of the project is conservative, considering that by Q1202 82% of clients in MFI's portfolio of Prodesarrollo network were women.

D. Project Results, Measurement, Monitoring and Evaluation

3.18. **Project Results**. By the end of this project the following results are expected: (i) 2,485 of female loan recipients with an increased adaptative capacity by verified[15] and monitored adopted adaptation solution, (iii) 2,485 of male loan recipients with an increased adaptative capacity by verified and monitored adopted adaptation solution. Additionally, project partners aim to increase funding seeking (ii) US$ 10,000,000 for concessional finance committed towards resilience finance in Mexico.

3.19. **Impact**. After six years (the projected repayment period for the contingent recovery funds is 3.5 years after project execution), YAPU will have launched and commercialized the AI solution as part of their current YAPU Data Services tool, globally, expecting to reach an annual revenue amount for this new line of business globally of near US$450,000. As a continuity and scale of the project in Mexico, they expect to have accumulated the disbursement of 295,000 loans in the country that would have allowed the implementation of around 177,000 adaptation solutions in vulnerable communities of Mexico.

3.20. **Measurement**. YAPU will be responsible for monitoring and evaluating the project's results as presented in the Results Matrix and Milestones Table. YAPU is setting up an Execution Unit, in Mexico within ProDesarrollo, to coordinate measurement and reporting among partners. YAPU software is a MRV system designed to provide reporting of the indicators defined by default, and as part of the AI tool development, it will include a verification system based on the taxonomy defined for Mexico. As part of their collaboration with ProDesarrollo, YAPU will develop a methodology to measure increased adaptative capacity resulting from adoption of verified and monitored adopted adaptation solution. This methodology will be defined as part of the Path to Resilience approach and Gender Plan and shall be continuously refined.

3.21. **Monitoring and Evaluation**. Since the project will develop and pilot the new AI tool for first time in the target states there is no baseline for this project. Pilot Reports and PFIs project reports will include how the institution advances in the analysis of loans, in providing recommendations on adaptation solutions, on disbursed loans, and finally on verified adaptation solutions in the field. The Path to Resilience yearly reports will include updates on impact (increased resilience capacity) methodologies and yearly measurements. The project will also include PFI Portfolio Certifications that will be determinant for the selection of PFIs but also for the design and development of the AI data model. Additionally, ProDesarrollo will provide monitoring reports on capacity building efforts. Once the PFIs have been identified, YAPU will collaborate with the IDB Lab to ensure that they meet with relevant IDB integrity and due diligence screening procedures, as well as follow fAIrLAC recommendations. Within IDB Lab, the project will be supervised by the IDB Lab team in the Mexico Country Office (CCB/CME) in coordination with the IDB Lab EcoMicro Program Team within the Barbados Country Office (CCB/CBA). The Country Office in Mexico will retain responsibility for disbursements.

3.22. **Reports**. The Executing Agency in close collaboration with the consulting partner will be responsible for presenting Project Status Reports (PSRs) within thirty (30) days after the end of each semester, or more frequently as determined by the IDB Lab by providing at least sixty (60) days advance notice to the Executing Agency. The PSR will contain information on the progress of project execution, achievement of milestones, and completion of project objectives as stated in the results matrix and other operational tools. The PSR will also describe issues encountered during the execution and outline possible solutions. Within ninety (90) days after the end of the execution term, the EA/consulting partner will submit a Final PSR to IDB Lab, which will highlight results achieved, project sustainability, evaluation findings, and lessons learned. These reports are necessary to comply with the Program Evaluation Plan that requires annual reports to the Donor's Committee describing the progress, performance, and all recorded results.

[15] Verified and monitored adopted adaptation solution reported based on PFIS MVR and YAPUs verification efforts of 7% of portafolio or equivalent standards. Increased adaptative capacity to be defined and measured, according to the defined Path to Resilience for end-customers (see Component 3).

3.23. **Knowledge Products**. YAPU in collaboration with ProDesarrollo and with guidance from IDB Lab will commission a series of Case Studies that capture the experience, outcomes and lessons learned under this project, as follows: 1) Resilience finance taxonomy for Mexico, in alignment to NAP and NDC, and 2) Scaling up Resilience finance in Mexico, the case for a new blended finance vehicle to fund benchmarked MFIs, and 3) Path to Resilience for end-customers, with gender lens will be developed including methodologies (capacity building and impact measurement) and learnings from its application in the project.

IV. ALIGNMENT WITH IDB GROUP, SCALABILITY, AND RISKS

E. Alignment with IDB Group

4.1. The project is aligned to the IDB Climate Change Action Plan, approved in December 2017, which calls for the development of innovative financial models and promotion of new technologies to address climate change in the private sector. According to the 2015 Joint Report on Multilateral Development Banks' Climate Finance tracking, 100% of total funding for this project is invested in climate change adaptation activities aimed at encouraging MSMEs and low-income households to adopt climate change adaptation technologies or practices, expecting mitigation impacts. This contributes to the IDBG's climate finance goal of 30% of operational approvals by year's end 2022.

4.2. The project fully supports the overall objective of the IDB Mexico Country Strategy 2019-2024. Specifically, by promoting and scaling resilience finance for the implementation of adaptation solution by farmers and microentrepreneurs of less-developed Mexican states, the project contributes to the priority areas of “fostering more balanced and sustainable regional development” and “encouraging more buoyant investment”. The project strengthens the financial system by improving climate risk management and decision processes of microfinance institutions and aligning to the commitments made by the country in its NDC. Overall, the project objectives contribute to the indicator “Amount of credit extended for rural environmental sustainability” linked to IDB’s strategic objective of “Strengthen access to credit” in Mexico.

4.3. The project will seek the collaboration and synergies two IDB Lab and Bank specific projects in Mexico: 1) the Small Farmers Climate Change Adaptation Fund (SMAF) (RG-Q0082), executed by Add-Value Management Services S.A, seeking knowledge exchange and business development for blended finance schemes for resilience finance scale up in Mexico, 2) “P2P agro-fintech for unbanked small farmers” (ME-G1016), executed by EthicHub, seeking learning exchanges on attending vulnerable communities and improving green taxonomy.

4.4. The project is fully aligned to IDB Lab Business Plan 2022-2023, specifically to the Agriculture and Natural Capital vertical, as well as to the Financial Inclusion vertical. Therefore, the project overall contributes to IDB Lab goals “*to improve farmer and rural communities’ livelihoods and resilience to climate change by promoting innovation and new technologies throughout the ag and food value chain*” and “*to expand access to finance by leveraging financial innovation, including new digital tools and fintech solutions*”. Project results contribute to the increase access to financing by low-income segments and enhanced climate resilience of women and men farmers and microentrepreneurs.

4.5. In addition, the project is aligned with the following Sustainable Development Goals (SDGs) set forth by the United Nations General Assembly: (i) SDG 5– Gender Equality: Target 5.B Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women; SDG 12–Responsible Consumption and Production: Target 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable

development and lifestyles in harmony with nature; and SDG 13 – Climate Action: Target 13.B Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.

F. Alignment with National Adaptation Priorities

4.6. The Mexican NAP focuses on five areas: (i) prevention of negative impacts on the population and the territory, (ii) productive systems' resilience and food security, (iii) restoration and suitability of biodiversity, (iv) water resources management, and (v) the protection of tangible cultural heritage. The proposed solution has specific potential to respond to the prevention of negative impacts on productive systems' resilience and food security with co-benefits for ecosystems and biodiversity. The project has a strong social impact as it focuses on financial inclusion of vulnerable communities affected by climate change.

4.7. The project will contribute to NDC/NAP taxonomy of adaptation solutions, by aligning the promotion of resilience finance among the PFI and working in an aligned definition of the local taxonomy, providing a catalogue of at least 150 adaptation solutions, at least 5 of which are gender-led.

G. Scalability

4.8. Through YAPU's partnership with ProDesarrollo, the pilot will be scaled across their broader network of 62 microfinance members. Under this project ProDesarrollo will consolidate its role as the Resilience Finance Hub for Mexico. ProDesarrollo is in advanced dialogue with Mexico's Trust Fund for Rural Development (FIRA)[16] a second-tier development bank established by the Federal Government of Mexico in 1954, and the French Development Agency, to establish a Special Purpose Vehicle (SPV) to provide blended finance and guarantees to their FI. This project will establish synergies with this SPV leveraging the AI-tool to scale resilience finance in the country. Meanwhile YAPU aims to promote the AI-tool and broader innovative methodology developed under this project via their partnership network under the Scale for Resilience initiative (see 2.6) in order to offer it more widely across LAC. YAPU is also in preliminary discussions for two global adaptation finance credit lines to be structured by development finance institutions with the Green Climate Fund. Similar discussions are also underway with commercial banks such as BNP Paribas, private asset managers such as GAWA capital, among others. YAPU is optimally positioned to take advantage of its long-standing track-record and these partnerships to scale the AI tool as an important market differentiator in resilience finance.

H. Project and Institutional Risks

4.9. **Operational risk.** Project delays in implementation due to lack of government or local financial institutions' support or participation. Mitigation: YAPU will work with proven partners for the execution of key project components. The project will rely on current ProDesarrollo networks, a key partner in the project. The Technical Cooperation operation has been conceived to advance capacity development to reduce implementation risks, and it will allow for the set-up an Execution Unit in Mexico, that will engage with all actors, therefore mitigating operational risks.

[16] FIRA is a second-tier development bank that offers credit and guarantees, training, technical assistance and technology-transfer support to the agriculture, livestock, fishing, forestry and agribusiness sectors in Mexico. FIRA has an extensive network of 143 offices throughout Mexico, more than 40% of which are based in communities with fewer than 50,000 residents. FIRA's field offices and headquarters include a staff of more than 1,150 agricultural and finance specialists with a deep knowledge of Mexico's farming conditions and producer capabilities.

4.10. **Institutional risk.** Experienced difficulties in establishing a collaborative dialogue or stakeholder engagement between the public and private sector. Mitigation: The respective dialogue is already in place based on established and proven structures – the proposed project strengthens and leverages these structures, built from the Scale for Resilience Initiative and others. The project activities will ensure from early on a high buy-in by relevant stakeholders and establishing direct coordination mechanisms. Similarly, the activities consider a participative process to consult and validate all the proposed project solutions with stakeholders.

4.11. **Market risk.** No enabling conditions available to deploy the pilot experiences of proposed taxonomy and methodologies. Mitigation: The project will be launched confirming institutional agreements and arrangements including every relevant stakeholder involved, providing evidence-based data and proven tools for persuading decision-makers to enact the needed enabling conditions. Market risks of PFIs and related to the scale of resilience finance are going to be mitigated by the design and development of the AI solution.

4.12. **Risks of bias in design.** Lack of fairness of designed tool that generates the exclusion of underrepresented communities such as women and most vulnerable communities from project benefits including consultation and training. Mitigation: The project will develop a Gender plan in collaboration with YAPU and ProDesarrollo, that considers gender approaches in solution design and Path to Resilience concept definition, as well as specific actions in data gathering, capacity building and impact measurement and management. Additionally, the project has been assessed by fAIrLAC. As a result, the YAPU team will be supported by fAIrLAC experts and has committed to secure ethical data governance, fairness and robustness in design of the solution and establishment of monitoring measures. Implementation of these mitigation actions is part of the Project Milestone. See Annex X1 for details relating to the fAIrLAC initiative, ethical self-assessment tool applied to this project (on 18th of August of 2022 as part of the due diligence and design phase) and arising recommendations to be integrated into the AI design.

V. INSTRUMENT AND BUDGET PROPOSAL

5.1. The project has a total cost of **US$1,023,950**, of which **US$361,800 (35%)** will be contributed by the Pilot Project for Climate Resilience (PPCR) as a Contingent Recovery Investment Grant under the EcoMicro 2.0 Program Facility (RG-O1698); additionally, **US$150,000 (15%)** will be contributed by the EcoMicro Nordic Development Fund (NDF) (ATN/NV-13162-RG) as a Non-Reimbursable Technical Cooperation under EcoMicro Facility (RG-X1131). See Table 1 Project Budget for details.

5.2. The Executing Agency will make a counterpart contribution of US$512,150 (50%), of which US$260,350 (25%) will be in cash and US$251,800 (25%) will be in-kind. Counterpart distribution is expected to be as follows (i) 75% from YAPU related to Climate Risk Data and MVP development, (ii) 11% from PRODESARROLLO considering the use of own proprietary tools, materials and methodologies, and (iii) up to 14% from participant FIs, considering resources and payments made for the use of AI solution.

5.3. The expected execution period for this Project is 30 months and the disbursement period is 36 months for both instruments. For CRIG purposes, the Repayment Period begins on month 30th with the first measurement of the triggering milestones once the execution period ends. It will have a duration of 72 months from project signature (42 months after execution period), after which the CRIG recovery expires if not triggered.

5.4. The project recognizes a retroactive contribution up to US$40,000 of counterpart funds related to Components 1 and 2 (preparation activities and set up the development team) from project eligibility date: 5th July 2022. Once approved, IDB resources dedicated to activities of the project can be retroactively recognized from project approval date, any reimbursement of funds to be requested under first disbursement request.

Table 1: Project Budget

BUDGET ITEMS	Budget (US$) - Total				
	IDB Lab Support		Counterpart		Total Amount (US$)
	ME-T1498 EcoMicro NDF (RG-X1131)	ME-G1028 EcoMicro 2.0 PPCR (RG-O1698)	Cash	Kind	
Component 1: Preparation, Data gathering and Capacity building	77,000	84,000	77,500	74,000	312,500
Component 2: Development, Piloting and Adoption of AI -powered decision making	32,000	202,000	105,000	61,000	400,000
Component 3: Outreach and Awareness to scale resilience finance	21,000	30,000	36,000	56,000	143,000
Project Management/Administration:	20,000	45,800	41,850	60,800	168,450
	150,000	**361,800**	**260,350**	**251,800**	**1,023,950**
GRAND TOTAL	**15%**	**35%**	**25%**	**25%**	
Pari passu	**50%**		**50%**		**100%**

VI. EXECUTING AGENCY (EA) AND IMPLEMENTATION STRUCTURE

H. Executing Agency(s) Description

6.1. **YAPU Solutions**. The Executing Agency for this project is YAPU Solutions GmbH, a technology startup founded 2017 in Berlin, Germany, with offices in Ecuador and Rwanda. YAPU Solutions is a market leader in resilience finance offering software and knowledge to Financial Institutions. In past flagship projects YAPU has been able to disburse around US$80 million for adaptation solutions in Latin-America and Western Africa. YAPU's vision is *to empower and enable MFIs to act as agents of change climate change*.

6.2. YAPU’s products and services digitize the credit evaluation process for smallholder farmers. YAPU is specialized in the development of technical solutions to facilitate an automated analysis that allows FIs a complete view on production and climate risks, entails recommendations on farming practices and crops, and facilitates design of financial products to support the most suitable adaptation solutions per farmer, providing a software platform as central digital MRV tool. With these solutions YAPU focuses on promoting and deploying resilience finance offerings to vulnerable populations with a strong focus on the Global South.

6.3. YAPU's team is the most valuable strength they have, as the vision and design of products and services draws on decades of experience among its team in microfinance and banking, as well as software and data management - with a focus on green, climate and agriculture in Low-and Middle-Income Countries.

6.4. YAPU's track record is strong and the proposed deep tech innovations builds upon several projects that YAPU has implemented in the past. Over the last 3 years, YAPU has implemented projects with a total volume of EUR1.8 million and has restored operations after the COVID-19 impact. To date, YAPU has invested more than US$1 million in software services and products. Throughout the implementation of these projects, YAPU has iteratively improved its software and usability, developed training methodologies (Path to Resilience – see 2.5.ii) for FIs to integrate resilience finance into their operations, training materials on the YAPU software, data, taxonomies and studies on: i) how FIs can increase smallholder farmer resilience; ii) and the quality of data required in order to implement an AI based resilience finance project.

6.5. YAPU Solutions' main flagship programs include "Microfinance for Ecosystem-based Adaptation" (MEbA)[17] executed by United Nations Development Program, and EcoMicro "Agricultural Finance and Smart Data for Climate Adaptation in Ecuador"[18] financed by IDB Lab. In this same line of action, IDB Invest hired YAPU to build a customized climate risk management system for the Guatemalan MFI Fundación Génesis Empresarial. By 2018, YAPU had established of operations in both Latin America and Sub-Saharan Africa. In 2019 the first reliable working version of YAPU software was developed. COVID-19 temporarily halted operations in 2020 however activity resumed swiftly in 2021 with new projects such as the MEbA Biodiversity platform[19] and Scale for Resilience Initiative – the latter was launched as one of the 25 initiatives under the UNFCCC Race to Resilience. Scale for Resilience has recently conducted a webinar series focusing on resilience finance together with key partners and was selected to co-lead "Food and Agriculture" theme of the Resilience Hub during COP27. The present project will leverage the experience, key expert partners, data, knowledge, and resources of these past achievements.

6.6. **YAPU Data Services as the core product**. *YAPU Data Services* is the key focus of YAPU's activities and host of the credit scoring engine. In order to operate YAPU Data Services, institutions need to connect via software interfaces or standard APIs offered by YAPU. YAPU offers four types of products to support internal analysis and processes: (1) *YAPU Platform* (focused on specific processes and provides a standardized and simplified data gathering approach and final scoring report), (2) *YAPU Digital* (digitization of more complex processes with greater inputs and outputs), (3) *YAPU MIS* (amplifies the set of reporting functions informing management on risk, commercial or performance data), and (4) *YAPU Invest* (specific reports to investors).

6.7. **YAPU's financial situation is solid and growing.** Current equity: including convertible loans with an obligation to convert into equity, disbursed and committed as of May 2022 is approximately EUR 1.4 million. Current runway: 14 months, with next capital round foreseen in Q2-2023. Operational break-

[17] The Microfinance for Ecosystem-based Adaptation (MEbA) project seeks to provide vulnerable rural and peri-urban populations with access to microfinance products and services that allow them to invest in activities that improve their income, increase their climate resilience and allow them to sustainably use ecosystems and their services. It focuses on developing solutions for Microfinance Institutions and their clients to increase their capacity to manage climate information and risks, while promoting ecosystem-based adaptation options (EbA). The project covered 8 countries in 2 continents, with the following key results reached: USD 30,699,583 of private investments towards Ecosystem-based Adaptation mobilized, 17,870 loans disbursed for EbA, 4,385 farmers trained. The promoted Ecosystem-based Adaptation solutions included: solar dehydrators, crop rotation, organic agriculture, aquaculture, efficient biomass stoves.

[18] The US$ 1.5 million EcoMicro in Ecuador was led by *Red de Instituciones Financieras de Desarrollo* (RFD) in partnership with YAPU Solutions, had the objective to apply modern data management methodologies, like machine learning based on Big Data, to differentiate end-customer risk profiles, improve technological and financial product offerings, and adjust financing terms to the individual reality of different customer segments. Seeking to identify and analyze the economic feasibility of climate technologies and other production solutions. Key results reached by the project: USD 7,683,703.21 approved for financing climate solutions, 25 climate solutions analyzed and operationalized, and 1,638 FI's employees trained.

[19] Partnering with UNDP and BNP Paribas, YAPU builds the biodiversity platform, aiming to offer Financial Service Providers proven methodologies for agricultural credit assessment using state of the art digital tools, while raising awareness on the importance of including biodiversity considerations and managing climate risks in agricultural lending.

even foreseen for H1-2024 (this includes a general probability weighted revenue impact of grants and public funding). In 2021 YAPU closed with EUR 533,000 TOP (Total Operating Performance, and a negative EBIT of EUR-225,000. YAPU expects to close 2022 with EUR 631,000 TOP and EUR -157,000 EBIT but having positive EBIDTA for first time of EUR 47,000. In 2024, when they reach break-even, YAPU is expecting to close with an EUR 567,000 EBT (see Annex for Business Plan and Projections).

6.8. **ProDesarrollo, Finanzas y Microempresa, A.C.:** YAPU's strategic partner and expert field agency under this project. ProDesarrollo was founded in 1996 and is Mexico's national MFI network, currently grouping 62 productive microfinance institutions[20] that seek to contribute to economic development and the fight against poverty. Its portfolio of financial products includes productive microcredit, savings, microinsurance, housing microcredit, green loans, among others, as well as financial education, gender empowerment and health services. The associated MFIs serve more than 5.46 million microentrepreneurs (82% are women). Given the nature of microcredit and its use in the family environment, it is estimated that it reaches around 21 million people, with a loan portfolio of US$2.8 billion, with coverage in 91% of Mexico's municipalities. As a strategic partner ProDesarrollo will contribute to select and support the PFIs. As a field expert will lead capacity building, MVP piloting with PFIs, gender strategies and impact measurement and management in the field.

6.9. ProDesarrollo is a gender and impact expert in microfinance sector. To conduct gender impact analysis, ProDesarrollo partners the national Instituto Nacional de las Mujeres (INMUJERES) to incorporate their "traffic-light system" on national statistics in the areas of gender violence, poverty, single motherhood, mobility, digital gaps, femicides. This system assesses the level of financial inclusion in order to incentivize, promote and prioritize certain products and conditions in red-light areas that show gender gaps and then monitors each FI's performance and impact. Currently, ProDesarrollo is collaborating with IDB Invest in conducting a survey about financial services footprint in gender finance.

6.10. **UNICSOFT:** YAPUs long-term tech development partner. Unicsoft is a full-cycle custom software development house, specialized in AI & Blockchain technologies with 180+ talents onboard. The company has been operating since 2005 on the global market, mainly in the EU, the US, and Israel. Unicsoft has been incorporated in Ukraine, Cyprus and the United Kingdom to ease the engagement procedures for 250+ global customers. The company operates across various business verticals providing technical consultancy, turnkey solution delivery and team augmentation services. Unicsoft has been successfully cooperating with YAPU since 2017 building and further evolving a credit lifecycle management solution used by major banks in Europe and LATAM. Technology-wise, Unicsoft specializes in various AI-based solutions setting up an end to-end data pipelines (incl. ETL, DW, Data Processing Automation, etc.) and building Data Analytics bespoke software such as Prescriptive, Descriptive, Predictive and Diagnostic Analytics, NLP/NLTK, Computer Vision, custom BI solutions and more.

6.11. **CIAT/CCAF (International Center for Tropical Agriculture):** YAPU's key knowledge and technical expertise partner. CIAT is one of the 15 Research Centers of CGIAR, the world's largest partnership of agricultural research-for-development organizations. CIAT generates knowledge about climate change impacts and identifies adaptation options for the rural poor as well as options that can help mitigate climate change. It is focused on agrobiodiversity, decision and policy analysis, agroecosystems and sustainable landscapes. CIAT is a partner of the Scale for Resilience Initiative and have collaborated with YAPU in the past in the definition of taxonomy. Within this project, CIAT/CGIAR will provide historical climate risk data and climate risk maps that will be fed into the YAPU platform, access to this data is paid by YAPU as counterpart funding, while access is granted via the Scale for Resilience partnership.

[20] http://prodesarrollo.org/asociados/

I. Implementation Structure and Mechanism

6.12. The Executing Agency's Managing Director will have overall responsibility for the oversight of this project. For project implementation, a Project Execution Unit (PEU) will be created, comprising YAPU and ProDesarrollo teams, and will be led by the Project Coordinator with oversight by the Managing Director. Withing this PEU, YAPU will transfer international best practices for capacity building of FIs to ProDesarrollo and provide access to its platform services to promote resilience finance. ProDesarrollo will receive capacity building to become the central knowledge hub for Resilience Finance in Mexico, adopting the Path to Resilience methodology and transferring its implementation and impact measurement systems to PFIs.

6.13. The PEU will operate virtually and interface regularly with the IDB Lab project team. The PEU will further make use of available resources and function within the Executing Agency's to achieve the targeted results of the project. The PEU will comprise the following roles and responsibilities:

i. **Project Coordinator (PC).** YAPU's *Program Innovation Manager /Coordinator Scale for Resilience* will serve as the PC, responsible for day-to-day management and coordination of the overall project, including liaising between the technical product development teams and the local Market and Outlook Coordinator based in Mexico. The PC will have responsibility for the preparation of all reporting requirements, including bi-annual PSRs that will provide progress on project implementation to IDB Lab. PC will lead all institutional engagement with IDB, ProDesarrollo and other project partners.

ii. **Financial and Administrative Coordinator (FAC).** YAPU's Finance Manager/CFO will act as FAC. The Financial and Administrative Coordinator will be responsible for financial management of project resources under the project.

iii. **User Experience Coordinator (UXC).** YAPU's Product Manager (PM) will act as UXC, which will be responsible to measure and adapt user acceptance of the solutions provided, on front as well as back-end solutions proposed and developed. This role will be responsible of the engagement and supervision of UNICSOFT, YAPU's developed partner, and in collaboration with PC, will lead the technical access to data of third parties, such as CIAT. This role is jointly financed by IDB and counterpart funding.

iv. **Market and Outreach Coordinator (MOC).** This position will be embedded in ProDesarrollo and will have responsibility for the coordination of relationship with PFIs and further market development and outreach activities. Tasks will include facilitation of engagement with local public and private stakeholders, development banks/financing partners, market research and development, customer acquisition, and alignment with legislative and regulatory policies. This role will be jointly financed by IDB and counterpart resources under this project.

v. **Capacity Development Coordinator (CDC).** This position will be embedded in ProDesarrollo and will work closely with ProDesarrollo's existing capacity building and gender experts. Their role will be to lead the definition of methodologies, implementation strategies, and monitoring. The CDC will be responsible of related knowledge development. This role will be jointly financed with IDB and counterpart resources.

6.14. **Non-Reimbursable Technical Cooperation (ME-T1498).** This operation will provide US$150,000 in NRTC funding, to strengthen ProDesarrollo in their delivery of their capacity development of the PFIs (and wider microfinance network at scale) as well as ensure accountability of end-client impact, including gender targets – including verification of disbursement of adaptation loans to vulnerable populations. Most of these resources (US$111,000) will strengthen the strategic partnership between YAPU and ProDesarrollo, with YAPU hiring the latter as a key field expert in the role of capacity building and field impact management. ProDesarrollo will undertake the following specific tasks: i) lead the selection process of suitable PFIs that have the necessary conditions, willingness, resources to participate in the;

ii) cooperation in the definition of the gender plan according to the expertise of each institution; iii) collaborate in the review of existing taxonomies in Mexico, the alignment with NAPs and the development of a resilience finance taxonomy with gender lens; iv) serve as linkage and capacity builder of PFI, applying own capacity building tools (In these terms, the institution will apply its own; v) contribute to the re-definition the Path to Resilience concept, adopting and applying it to include resilience finance categories in the annual network benchmarking, having run at least one benchmark assessing the PFIs by the end of the execution of the project; vi) provide support to gather all input, information and leading relations with key stakeholders such as FIRA in order to refine the business model and plan scale up strategies; vii) work closely together to consolidate project reports, material and case studies for knowledge dissemination.

6.15. **Contingent Recovery (ME-G1028).** This project will provide US$361,800 in contingent recovery financing under EcoMicro 2.0. The CRIG will consider all investments done by YAPU as an enterprise to design, develop and pilot the AI solution, as well as to invest in market intelligence and strategies to scale up. The contingency recovery will incentivize project impact in Mexico, applying a discount if certain level of impact is reached. Semiannual payment triggers depending on AI product sales revenues, expected to be commercialized globally. Hence, the CRIG supports alignment of YAPU's business and impact goals.

6.16. The project's technical files include the terms sheet agreed to with the Executing Agency. The summary of main terms are as follows:

i. The Recovery Period begins at month 30 after signature, once execution period ends. It will have a duration of 72 months from project signature (42 months after execution period), measuring triggering milestone natural calendar periods of six months. Compliance is reviewed within sixty (60) days after the end of each semiannual period.
ii. The mode and frequency of repayment is semi-annual: June 15 and December 15. Payments are done in case the triggering milestone triggers on prior semester. Last payment cycle would be month 78 from project signature, if triggered.
iii. The company will reimburse IDB Lab up to US$361,800 (or effectively total amount disbursed) if milestone is triggered. If the Executing Agency demonstrates that it has met the impact incentive targets defined, the amount to be repaid to IDB Lab will have a deduction of up to US$100,000.
iv. The triggering milestone is a combination of i) "AI product semester sales "AI product global sales revenue, measured as the compliance of defined semester trigger sales of global AI product sales (not only Mexico, not cumulated - Semester to date), and ii) "YAPU EBITDA", YAPU institutional EBITDA measured as per financial statements for the same period and standard EBITDA definition as "Earnings before interest, taxes, depreciation, and amortization". Specific targets for each period are set in project Term Sheet (see Annexes).
v. The impact indicator is "Semester # of women loan recipients that increased adaptative capacity, by verified and monitored adopted adaptation solution". Specific targets for each period are set in project Term Sheet (see Annexes).
vi. The mode and frequency of recovery is semi-annual payments. If triggering milestone triggers (Indicator 1 + Indicator 2) and impact indicator triggers on a specific period, the semi-annual payment is calculated as Trigger payment – Impact discount. Specific payments and discount are set for each semester in project Term Sheet. Non triggered payments on a specific period are accumulated for last period.

6.17. **Project Projections.** YAPU runs project projections based on ProDesarrollo network data (Q2 2022) and has defined three different scenarios: A) Baseline, with a probability of 50% to happen, considers a medium level usage based on moderate market penetration; B) Adverse, with a probability of 20% to happen, considering that product is not readily taken up by market, assuming price reaction to low-level

demand, low-level usage; and C) Favorable, with a probability of 30%, considering that YAPU is able to integrate the AI offer and resulting services into large scale adaptation funding programs after execution period which allows to offer lower prices via economies of scale. CRIG projections and payments are based on Baseline scenario, assuming that Net Present Value of the project is positive by year 2028 (discount rate 10%), considering investments for project pilot and its expansion and future viability (overheads, hardware development, maintenance, compliance).

6.18. YAPU projects institutional breakeven by 2024, and therefore reaching a positive EBITDA by year 2025. This is a key milestone triggering the payment together with project sales over EUR30,000 for first semester of 2025 (after approx. 36 months after project signature, or up to 6 after end of project execution), which will trigger the first payment. Semiannual repayments are expected to be variable based on business and impact performance of each semester.

6.19. The potential reasons to adverse scenario are that: there is no funding available, only pioneering institutions are using the service, delays in taxonomy development Mexico, low urban competitive pressure to spur rural finance (where adaptation plays a higher role). The favorable scenario relies in the increase of funds for resilience finance via pre-identified programs such as: Dry Corridor (CABEI, LAC - potentially USD1m turnover), iGreenFin and similar (IFAD, SSA - potentially US$1-2m turnover), Kuali Fund (GAWA Capital, global - potentially US$0.5m turnover) and other YAPU-owned programs under preparation.

6.20. All project assumptions are based on previous experiences of YAPU, mainly on EcoMicro Project in Ecuador (based on a total of US$28m portfolio disbursed across 6 EcoMicro institutions): 1) the share of portfolio generated using YAPU (non-AI) data services lay between 1.7% and 7.2% of total institutional loan portfolio; ii) YAPU (non-AI) data services over full number of portfolio analyses varies between 15% and 50% after 24m; iii) institution reaches 90% loan approval level, and it is considered that chances of approval should rise with AI support. Finally, YAPU expects the project to have a market coverage of 90% of regions within Mexico (with different concentrations within those regions; and assuming that climate data is presented in national maps and available for the entire national territory).

VII. COMPLIANCE WITH MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

7.1. **Results-based disbursement and fiduciary arrangements.** The Executing Agency will adhere to the standard IDB Lab disbursement by results, Bank procurement policy[21] and financial management[22] arrangements as specified in Annex VII and VIII. YAPU, acting as the Executing Agency, will agree to standard IDB Lab arrangements for results-based disbursements, procurement, and financial management, as established in the technical file. Project disbursements will be contingent upon verification of fulfilment of milestones, in accordance with the means of verification agreed to between the executing agency and IDB Lab. Fulfillment of milestones does not release the executing agency from responsibility for achieving the project objectives and the logic framework indicators.

7.2. Under the risk- and performance-based project management modality, disbursement amounts of the Technical Cooperation resources will be based on the project's estimated liquidity needs for a period of up to six months. Such needs will be agreed to between IDB Lab and the Executing Agency and will reflect activities and costs programmed in the annual planning exercise. The first disbursement will be contingent upon fulfillment of the conditions-precedent. Subsequent disbursements will be issued provided that the following two conditions have been met: (i) IDB Lab has verified that the milestones have been fulfilled, as agreed to in the annual planning exercise; and (ii) the executing agency has

[21] Link to the Policy: Procurement of Works and Goods Policy

[22] Link to the document Financial Management Operational Guidelines27 Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-9).

justified at least 80% of the accumulated advances of funds, (iii) the executing agency has submitted an investment plan for the use of the subsequent tranche of funds.

7.3. Following same criteria, Contingent Recovery Investment Grant resources will be disbursed in up to 2 disbursements for a maximum of US$200,000 each. Every disbursement will be contingent upon of i) financial performance and operational conditions prior to disbursement, ii) Non objection to the updated Investment Plan for the use of the resources requested, and iii) signed promissory note for the amount requested, iv) conditions specific to first and second disbursement as defined in the project Agreement (according to Terms Sheet in project's technical files).

7.4. **Procurement**. For the procurement of goods and consulting services, the Executing Agency will be governed by IDB's policies GN-2350-15 (Consultancy Services) and GN-2349-15 (Goods and Works)[23]. The Executing Agency is a legally established private entity with its own procurement procedures that are consistent with private sector practices as evidenced in the low-risk rating obtained in the Assessment of Integrity and Institutional Capacity (DICI); thus Appendix 4 of the Policies for the Selection and Contracting of Consultants applies.

7.5. **Modality and frequency of ex-post supervision.** An annual review of disbursements and procurement will be conducted using the institution's annual financial statement, including project details, produced by an external auditor acceptable to the Bank (otherwise an independent accountant according to regulation in Germany). These reviews will include a paragraph that describes: (i) the revenue received from IDB Lab Resources (EcoMicro) and the project partners; (ii) all expenditures made with funds contributed by IDB Lab and the counterpart, as reflected in the cash flow statement; and (iii) the amounts spent and balances available per project component, as shown in the statement of expenditures and accumulated investments.

VIII. INFORMATION DISCLOSURE AND INTELLECTUAL PROPERTY

8.1. **Information Disclosure.** Certain information relating to the business operations of the participating company will be considered confidential, in accordance with the Bank's Access to Information Policy. If specific information relating to a company will be divulged in any knowledge product created for the purpose of disseminating project information, express authorization will be obtained from the company's representative.

8.2. **Intellectual Property.** The Executing Agency shall own the intellectual property rights to all works produced or results obtained under the Project. The Executing Agency hereby grants the Bank an irrevocable world-wide, perpetual, royalty-free, and non-exclusive license to use, copy, distribute, reproduce, and publicly display the below listed Executing Agency intellectual property derived from execution of the Project ("List 1"), as well as to create derivative works. The Bank may grant sub-licenses to third parties without the need for new authorizations or licenses from the Executing Agency.

8.3. The Executing Agency shall represent and warrant to the Bank that execution of the Project does not and will not infringe the rights of third parties, and it must do everything necessary to ensure that the Bank is able to exercise the rights set forth herein, without limitation. The Executing Agency shall release and indemnify the Bank, its staff, sub-licensees, and/or consultants from any actions which could be initiated against them in the exercise of the rights licensed to the Bank.

[23] Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-9).

8.4. The Bank may disseminate, reproduce, and publish any Project-related information and include with such information the name and logo of the Executing Agency.

8.5. List 1:

1. Project Execution reports: PFIs portfolio certification reports; Internal software reports; PFI reporting (results on loans analyzed, recommendations provided, loans disbursed and amounts, adaptation solutions implemented); progress report, Data structure report; Evaluation reports.
2. YAPU's adaptation solutions implemented verification reports.
3. Project strategy paper including summary of market analysis for Mexico, Resilience Finance theory of change & proven hypotheses, and recommendations for roll-out in other markets;
4. Resilience finance taxonomy (full technical catalogue of climate adaptation solutions) and climate adaptation recommendations
5. Gender Plan, including capacity building and impact measurement and management methodologies and materials.
6. Path to resilience updated concept, including capacity building and impact measurement and management methodologies and materials.
7. General training materials on resilience finance.
8. Case studies developed (predefined topics on 1) Resilience Finance alignment for Mexico NAP and NDC, 2) Blended finance to scale up resilience finance in Mexico, 3) Path to Resilience for FIs and end-clients, under gender approaches)

End of List 1.

IX. RECOMMENDATION

9.1. The Chief of Unit, Discovery Unit, Cesar Buenadicha recommends the approval of this operation by the IDB Lab CEO, under the Delegation of Authority authorized under Resolution DE-103/14 and further delegation by the IDB President as described in PR-501 (sec.2.1) and the use of resources from the PPCR and NDF programs. Considering a contribution of US$361,800 from the PPCR as a Contingent Recovery Investment Grant under the EcoMicro 2.0 Program Facility (RG-O1698); and US$150,000 from the EcoMicro Nordic Development Fund (NDF) (ATN/NV-13162-RG) as a Non-Reimbursable Technical Cooperation under EcoMicro Facility (RG-X1131), in order to finance the corresponding project.

X. APPROVAL

10.1. I hereby approve, according to the Delegation of Authority provided by Resolution DE-103/14 and further delegation by the IDB President as described in PR-501 (sec.2.1), up to US$361,800 for the financing of the Contingency Investment Recovery Grant and US$150,000 for the financing of the Non-Reimbursable Technical Cooperation of the project *"EcoMicro 2.0 – AI-powered Decision and Finance support for Climate Resilience"* (ME-G1028 and ME-T1498) the "Project," to be considered as part of the EcoMicro 2.0 Facility.

10.2. That the resources of the project shall be utilized to finance the activities described and budgeted in this document chargeable to the resources from the PPCR EcoMicro 2.0 Program (RG-O1698) on a contingent recovery basis, and to the resources from the NDC EcoMicro Program (RG-X1131) for the non-reimbursement technical cooperation.

10.3. The commitment, disbursement and reimbursement of these resources shall be made only by the Bank in US$. The same currency shall be used to stipulate the remuneration and payment to the consultant, except in the case of local consultants working in their own Borrowing Member Countries who shall have their remuneration defined and paid in the currency of such country.

10.4. No resources of the Program shall be made available to cover amounts greater than the amount certified herein above for the implementation of this Project Document.

Approved

_____ 12/12/2022

Irene Arias Hofman Date
IDB Lab
General Manager