ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	PROGRAM FOR THE RESILIENCE OF VULNERABLE SMALLHOLDER COFFEE PRODUCERS IN MEXICO - ADAPTCAFÉ
Country:	Mexico
Thematic Focal Area:	Agriculture
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	IFAD
Executing Entities:	FAO
Amount of Financing Requested:	25,000,000 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes X No ☐

Amount of Requested financing for PFG: 150,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes x No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐ This concept has been submitted before
X This is the first submission ever of the concept proposal
In case of a resubmission, please indicate the last submission date: NA

Please note that concept note documents should not exceed 50 pages, including annexes.

A. Project/Programme Background and Context:

A1. National context

Coffee is one of Mexico's most socially and territorially significant agricultural crops. According to recent official and sectoral sources, the sector involves roughly half a million producers and around 800,000 hectares of cultivation, concentrated in the south and southeast of the country.[1] Coffee is produced mainly by smallholders: around 90% of producers cultivate 5 hectares or less, and production is concentrated in states such as Chiapas, Veracruz, Puebla, Oaxaca, and Guerrero. This makes coffee not only an important source of rural income, but also a strategic livelihood activity in some of the country's poorest and most climate-exposed regions. Most coffee-producing regions are vulnerable to climate change.[2] In most of these regions, production is carried out under traditional shaded systems, mainly under rainfed regime. The systems are characterized by low yields and limited value addition. The commercialization is often mediated by intermediaries, which significantly reduces producers' incomes.

Coffee production in Mexico is widely characterized by small family-based systems and a high presence of Indigenous producers, particularly in southern states where coffee landscapes overlap with areas of poverty, limited service provision, and restricted access to markets, finance, and technical assistance. These structural conditions reduce adaptive capacity and heighten the vulnerability of coffee-growing households to climate and market shocks.

Coffee-growing regions in Mexico are already experiencing significant climate stress. Producers face increasing exposure to hurricanes, irregular rainfall, prolonged dry periods, heat stress, and, in some locations, frost, alongside indirect impacts such as rising pest and disease pressure. Climate-sensitive risks such as coffee leaf rust and the coffee berry borer have become central production concerns, while recent climate variability has also disrupted harvest timing and labour availability. For example, Hurricane Agatha in 2022 caused serious damage in Oaxaca's coffee areas, including to roads and productive assets, and recent heat events have accelerated cherry maturation, complicating harvesting and reducing producers' ability to manage labour peaks.

These pressures have contributed to a marked deterioration in the sector over the past decade. Between 2010 and 2018, national coffee production reportedly declined by around 35%, while planted area fell from about 800,000 hectares to roughly 712,000 hectares.[3] Such a contraction has implications beyond the coffee economy itself. Where coffee systems become less viable, producers may shift to other land uses, including less tree-based systems, which can increase pressure on forests and undermine the environmental services provided by traditional shaded coffee landscapes. In this sense, the resilience of the coffee sector is closely linked not only to rural livelihoods, but also to biodiversity conservation, watershed function, and the maintenance of agroforestry systems.

Table 1. Country data on coffee production, vulnerability and readiness.

Indicator	Value
Coffee area harvested (ha)[4]	711,534
Share of global production (%)[5]	2%
Number of smallholder coffee farmers	500,000
ND-Gain Index[6]	94 (score: 48.7)

[1] Government of Mexico, Programa Institucional de Alimentación para el Bienestar 2025-2030. Available at: https://www.gob.mx/cms/uploads/attachment/file/1025975/PI_APB_2025-2030.pdf
[2] *https://www.gob.mx/inecc/acciones-y-programas/atlas-nacional-de-vulnerabilidad-ante-el-cambio-climatico-anvcc-80137*
[3] According to data from SIAP included in CONABIO, "La cafeticultura en México"
[4] FAO data
[5] ICO calculations
[6] Notre Dame's Global Adaptation Initiative (ND-GAIN). Country Index. Availale at: https://gain.nd.edu/our-work/country-index/

Mexico has a strong competitive advantage in coffee because traditional shade-grown arabica production is already the baseline across Chiapas, Oaxaca, Veracruz, and Guerrero, rather than a niche certification outcome. The project therefore does not need to create sustainable practices from scratch, but to make them more visible and legible to buyers. This pathway is already proven: around 35–40% of Mexican coffee is sold under certification schemes, and leading producer organizations in the target regions already operate multicertification systems. The domestic market also offers a concrete near-term opportunity. National coffee consumption increased from 230,000 tonnes in 2020 to more than 320,000 tonnes in 2023,[7] while the specialty segment was valued at USD 1.59 billion in 2024[8] and is growing at nearly 10% annually. At the same time, diversification beyond specialty channels can reduce exposure to commodity price volatility and climate-related income shocks. Mexican coffee also has untapped potential in value-added and alternative segments, including food ingredients, beverages, pharmaceutical applications, and organic by-products from processing residues.

Mexico's coffee sector has benefited from decades of support through public programmes and development initiatives focused on producer assistance, technical extension, renovation, rural finance, and market linkages. This experience shows that interventions are most effective when sustained technical support is linked to organized producers, quality improvement, and concrete commercial incentives. In this context, the Government of Mexico, through INIFAP, has promoted improved and disease-resistant coffee varieties, particularly those resistant to coffee rust, while the Producción para el Bienestar (PpB) programme has strengthened productive capacities through farmer field schools that currently reach around 30,000 coffee producers, primarily in Indigenous communities.

At the same time, important gaps remain, with support fragmented, short-term, or insufficiently aligned with the long-term investment cycles and risk profile of smallholder coffee systems. Challenges also persist in scaling up the adoption of resilient varieties, developing new climate-adapted genetic material, consolidating field school capacities, and ensuring sustained market access for climate-resilient coffee. The proposed project builds on these lessons and complements ongoing government support, including PpB and FIRA financial instruments, but is differentiated by its explicit focus on climate adaptation and resilience. Specifically, it addresses climate-related constraints that have not been adequately tackled through conventional coffee support measures by integrating climate-resilient renovation, ecosystem-based adaptation, climate and phytosanitary advisory services, resilient post-harvest practices, and inclusive adaptation finance for vulnerable smallholder producers.

A2. Climate change context

Mexico exhibits a highly heterogeneous climate, characterized by a wide range of temperature and precipitation regimes across its territory.

Historical climate trends

Temperature: Observed data show a clear and sustained warming trend across Mexico. Average air temperature has increased by about 1.69°C relative to the 1900–1930 reference period, with estimates ranging from 1.59°C to 1.81°C depending on the dataset used. This warming rate is substantially higher than the global average: while global mean temperature increased by about 1.23°C over the same period, Mexico's warming rate reached 2.88°C per century, compared with 1.90°C per century globally.[9] Warming has not been spatially uniform: the strongest increases have been recorded in northern and southeastern Mexico.

[7] Tea & Coffee Trade Journal / Euromonitor International, *Mexico Wants Its Top Ten Coffee Status Back*, March 2024. https://www.teaandcoffee.net/feature/33846/mexico-wants-its-top-ten-coffee-status-back/

[8] Deep Market Insights, *Mexico Specialty Coffee Market Size, Trends & Forecast Analysis (2025–2033)*, 2026. https://deepmarketinsights.com/vista/insights/specialty-coffee-market/mexico

[9] UNAM, 2023. State and Perspectives of Climate Change in Mexico: A Starting Point. Available at: https://cambioclimatico.unam.mx/wp-content/uploads/2023/12/State-and-Perspectives-of-Climate-Change-in-Mexico-a-Starting-Point.pdf

Precipitation: Observed precipitation trends in Mexico are more spatially and seasonally variable than temperature trends, but the evidence indicates that rainfall patterns are also changing. The UNAM assessment reports that average annual precipitation in Mexico increased by around 3.1 mm/month per century since the beginning of the twentieth century, with particularly significant increases in summer and fall. However, these national averages mask considerable territorial differences. From 1975 to 2021, precipitation declined in parts of the northeast and northwest, while central and southern regions generally experienced increases.[10] Seasonal changes are also uneven: winter precipitation shows negative trends across much of the country, while summer rainfall has decreased in several northern and central states but increased in parts of the southeast, including Oaxaca and Chiapas. For adaptation planning, the key issue is therefore not simply the direction of annual rainfall totals, but the growing irregularity and extremity of rainfall patterns. The same assessment finds that rainfall distribution has become more extreme, with longer dry periods and more intense precipitation events.

Climate change projections

Temperature: Climate projections indicate that warming in Mexico will continue throughout the twenty-first century under all scenarios. According to the UNAM assessment, average annual air temperature in Mexico could increase by about 6°C by the end of the century under a very high emissions scenario (SSP585), and by more than 5°C under SSP370. Even under a scenario broadly consistent with current NDC ambition (similar to SSP245), temperature increase could still approach 3°C by the end of the century, while a pathway aligned with the Paris Agreement (SSP126) could limit warming to around 2°C. For the mid-century period (2041–2060), projected increases under SSP585 range from around 1.8°C to 2.5°C across states, with the highest warming in northern states such as Coahuila, Chihuahua, and Sonora. By 2081–2100, temperature increases under SSP585 could exceed 4.5°C in 27 states and surpass 5°C in seven northern states. Figure 2).[11] **For agriculture, this means higher heat stress, lower yields, and growing production risks.**

Precipitation: Projected precipitation changes are more uncertain than temperature, but the overall national signal under higher-emissions scenarios is toward a hotter and drier climate with more extreme rainfall behavior. Under scenarios such as SSP585 and SSP370, average annual precipitation in Mexico could decline by around 8% by mid-century and about 15% by the end of the century. Intermediate-emissions scenarios project smaller changes, generally 5% or less. Equally important, precipitation regimes are projected to become more extreme. The assessment finds that most states are likely to experience longer dry periods alongside more intense rainfall on the wettest day of the year. Under RCP8.5, consecutive dry days could increase by more than 10 days per year by 2050 and by more than 21 days per year by 2090 in some states. Although the number of extreme rainfall days may decline in some places, rainfall intensity on the wettest day is projected to increase, implying fewer but more intense events. **Overall, this points to greater drought risk, more erratic rainy seasons, and higher exposure to runoff, erosion, and flood damage.**

Figure 1 shows downscaled climate scenarios[12] for 2041 – 2050 under SSP5-8.5 for the priority coffee regions of Guerrero, Chiapas and Oaxaca. Results show widespread warming, increasing thermal pressure and potentially shifting suitable cultivation zones to higher altitudes. Overlaying FFS helps identify where training should prioritize heat-tolerant varieties and shaded production systems. Additionally, it is expected that rainfall will be redistributed, including critical declines in some traditionally humid areas, such as parts of Guerrero. Overlaying this with FFSs helps identify where training should focus on watershed

[10] Idem.

[12] The climate projections were downscaled using a statistical method processed in Google Earth Engine. The analysis used NASA NEX-GDDP-CMIP6 climate projections, originally at 25 km resolution, and calculated the change signal between the projected 2041–2050 period and the historical reference period of 1995–2014, using absolute anomalies for temperature and change ratios for precipitation. This change signal was then applied to the higher-resolution WorldClim v1.4 dataset at 1 km resolution, allowing the maps to reflect the influence of Mexico's local mountains and valleys on temperature and rainfall patterns. Finally, the results were converted into shapefiles at a 10,000-meter scale, making them suitable for GIS analysis and for overlaying with the Farmer Field Schools infrastructure.

management, rainwater harvesting, and efficient irrigation. Table 2 summarises the results of the scenarios.

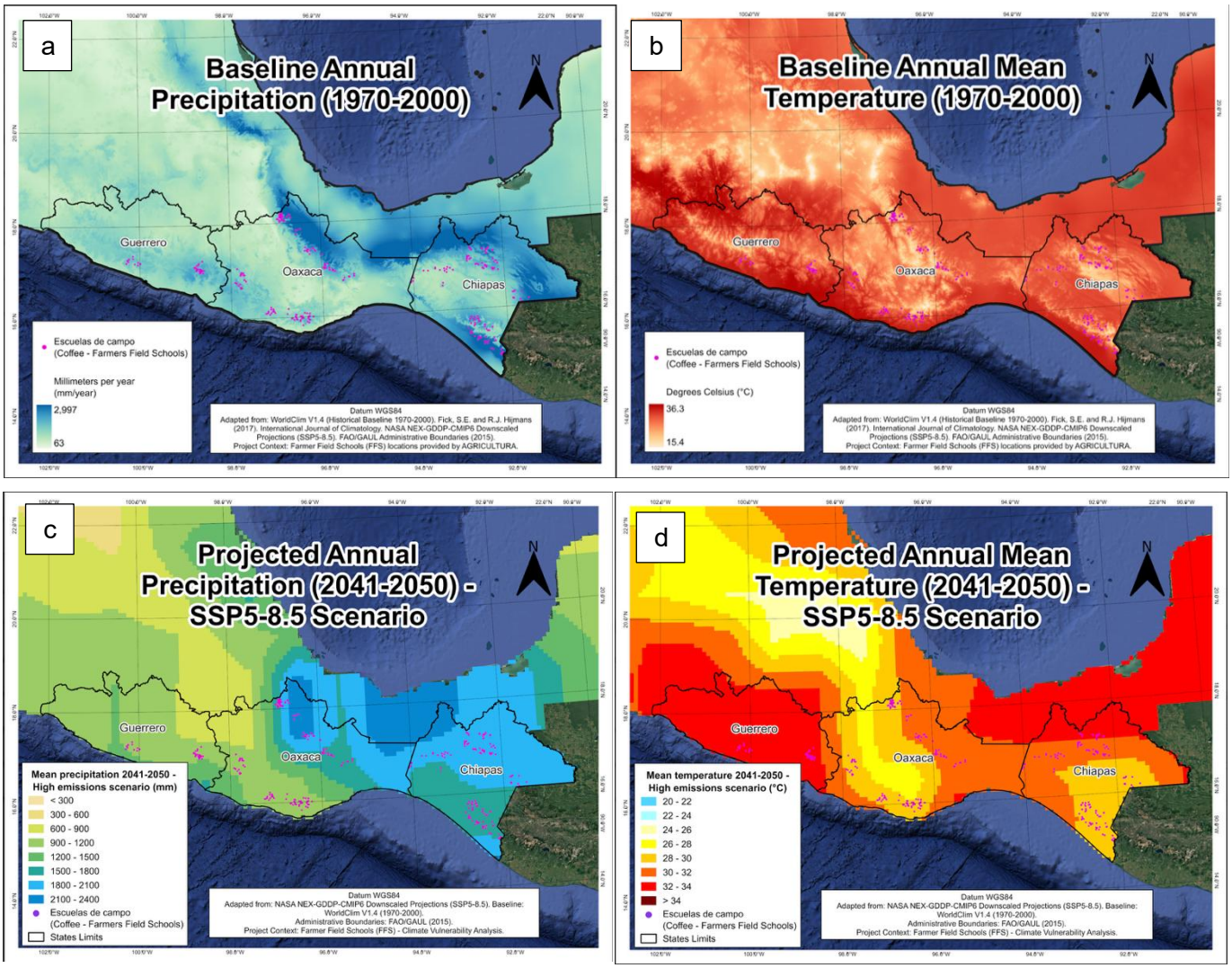


Figure 1. Historic trends and projected scenarios for SSP5-8.5 for Guerrero, Oaxaca and Chiapas: a) Baseline annual precipitation (1970 – 2000), b) Baseline annual mean temperature (1970 – 2000), c) Projected annual precipitation (2041 – 2050) and d) Projected annual mean temperature (2041-2050).[13]

Table 2. Summary of downscaled climate scenarios for 2041-2050 under SSP5-8.5

	Increase in Temp (C)	Variation in Rainfall (%)	Expected impacts
Chiapas	1.53	11.47	**Risk from excess moisture:** Increased rainfall combined with heat favors the spread of fungi such as coffee rust. This requires more intensive pruning management.
Oaxaca	1.95	26.42	**Impact on quality:** An increase of nearly 2°C and excess rainfall may accelerate ripening and wash away nutrients, affecting slope stability.
Guerrero	1.52	-8.49	**Water stress:** The combination of higher temperatures and lower rainfall will reduce the viability of coffee cultivation in lower areas, making a shift to higher elevations necessary.

[13] See note 15.

A3. Climate risks and impacts

Coffee systems are highly climate-sensitive perennial crops and are already being affected by **rising temperatures, changing rainfall patterns, longer dry periods, and more frequent extreme events** (see Table 3). Because coffee is produced largely under rainfed conditions, their productivity, quality, and health depend on relatively stable temperature and moisture regimes.

Climate change also undermines market access and income stability. Lower quality, variable production, and supply uncertainty reduce producers' ability to access differentiated and premium markets. This weakens incentives to invest in resilient practices and limits opportunities for value addition.

Production loss: Repeated climate shocks also threaten smallholder viability. For farmers with less than 5 hectares and limited savings, repeated losses can lead to debt, asset depletion, and eventual abandonment of production. In isolated and highly marginalized areas, these risks are even greater because the costs of transition are high and technical support is limited.

Decreased coffee yield: Coffee production shows a strong positive correlation with precipitation and significant negative correlations with both maximum and minimum temperatures.[14] National studies over two decades have documented productivity declines linked to rising temperatures and altered precipitation patterns. For instance, in Veracruz, productivity records show a 36% decline in yield from 2010 to 2020[15]. This trend is driven mainly by a confluence of climate threats: thermally induced stress that exceeds *C. arabica*'s optimal range (18–23°C); increased incidence of pests such as the coffee berry borer (*Hypothenemus hampei*), whose life cycles accelerate with warming; and the growing prevalence of coffee leaf rust (*Hemileia vastatrix*), favored by warmer and more humid conditions, alongside more frequent extreme weather events that disrupt phenology and damage plants.

Loss of land suitability: Climate projections for Mexico indicate that by mid-century (2045–2069), mean temperatures keep increasing by 1.6 -- 2.5 °C, while precipitation could decline by up to 10%, accompanied by longer dry seasons and more intense droughts. These changes are already driving shifts in optimal cultivation zones toward higher elevations and increasing the incidence of pests and diseases, such as coffee leaf rust (roya). For coffee, up to 34% of currently suitable land could become unsuitable within the next 15 years.

These sensitivities are translating into quantifiable losses of suitable cultivation area. For coffee, recent meta-analyses confirm that suitable cultivation areas in Mesoamerica could contract by up to 50% by 2050 under RCP 6.0 scenarios[16], with lowland regions becoming increasingly marginal. Other modeling studies, such as one focused on Mexico's Soconusco region, project a 4.5-4.8% reduction in land suitable for coffee due to changing climatic conditions by the year 2030.[17]

Table 3. Summary of climate change impacts along the coffee value chain. (Author's elaboration based on Bracken, et al. 2023[18], Davis, et al. 2012[19])

Climate hazard	Production (farm & nurseries)	Post-harvest (harvest, wet processing, drying)	Storage & marketing (storage)

[14] Jimenez-Torres, A. et al. 2015. Producción de café y variables climáticas: El caso de Espíndola, Ecuador Economía, vol. XL, núm. 40. Available at: https://www.redalyc.org/pdf/1956/195648804006.pdf
[15] https://pmc.ncbi.nlm.nih.gov/articles/PMC9824350/
[16] https://www.scielo.org.mx/scielo.php?pid=S2007-90282024000200009&script=sci_arttext
[17] *https://www.redalyc.org/journal/4760/476072134005/html/*
[18] Bracken, et al. 2023. Opportunities for enhancing the climate resilience of coffee production through improved crop, soil and water management, Agroecology and Sustainable Food Systems. Vol.47. https://doi.org/10.1080/21683565.2023.2225438
[19] Davis, et al. 2012. The Impact of Climate Change on Indigenous Arabica Coffee (Coffea arabica): Predicting Future Trends and Identifying Priorities. PloS ONE. https://doi.org/10.1371/JOURNAL.PONE.0047981

Hurricanes / tropical storms	Shade-tree blowdown; lodging/branch breakage; landslides on steep slopes; nursery damage; field access cut	Harvest interruption; cherries spoil if roads blocked; dryers/wet mills damaged; fermentation difficult if power/water disrupted	Transport interruptions; storage roof leaks; quality downgrading due to delays
Intense rainfall / flash floods	Erosion, gullying, nutrient leaching; waterlogging in pockets; seedling loss in nurseries	Dirty cherries, contamination; drying impossible outdoors; higher fungal risk	Flood damage to storage; access roads washed out; delayed delivery
Prolonged wet periods / high humidity	Higher foliar disease pressure; reduced field work windows; nutrient loss; outbreak cycles of coffee leaf rust increase	Slow drying → mold risk; Delayed ripening and harvest timing shifts; Fermentation hard to control	Re-wetting in storage; mold growth; price penalties/rejection
Longer dry spells / drought	Seedling stress and low establishment after renovation; yield declines; higher mortality in ageing plots; reduced flowering/bean fill	Water scarcity for pulping/cleaning; delays increase defects	Reduced volumes; income shocks; longer storage time may increase insect damage
Rising temperatures / heatwaves	Heat stress reduces yields; faster ripening lowers quality; increased evapotranspiration; more pest pressure	Faster/unstable fermentation; uneven drying if unmanaged Infested cherries increase defects; higher sorting needs	Quality deterioration if moisture control weak; more storage pests
Cold snaps / occasional frost[20]	Flower/leaf damage; nursery mortality; reduced yields	Delayed ripening and harvest timing shifts	Supply shocks; contract risks

A4. Gender and Indigenous People

Preliminary Gender Assessment

Mexico's national gender profile shows important progress in education and political representation, yet persistent gender gaps in economic participation, poverty, informality, time poverty, and exposure to violence continue to shape women's adaptive capacity—especially in rural and Indigenous coffee territories such as Chiapas, Oaxaca, and Guerrero. Nationally, women's educational outcomes are strong: girls' lower secondary completion is 90.9% vs 86.9% for boys, and adult literacy is high and near-parity (96.5% for women vs 95.4% for men). These strengths are a clear opportunity for adaptation programming—women can be highly effective adopters and disseminators of climate advisories, post-harvest quality protocols, traceability practices, and financial education—if delivery systems remove barriers to participation and ensure equitable access to services. At the same time, health and survival indicators point to uneven social determinants that matter for resilience: Mexico's maternal mortality ratio is 42 deaths per 100,000 live births (2023), and infant/neonatal mortality remain at approximately 12 and 8 deaths per 1,000 live births, respectively. These indicators matter for adaptation because health shocks and care burdens reduce women's time, mobility and continuity of engagement in training, cooperative governance, and market participation—key pathways through which coffee households adopt and sustain climate-resilient practices.

The project's three target states illustrate how gender inequality intersects with territorial disadvantage. Life expectancy is lower in Chiapas, Oaxaca and Guerrero than the national average and remains consistently higher for women than men: in 2024, Mexico's life expectancy is 75.5 years total (72.4 men; 78.9 women), while Chiapas is 73.0 (69.8; 76.4), Oaxaca 73.3 (70.1; 76.7), and Guerrero 73.1 (70.0; 76.5). This combination of lower overall life expectancy and persistent gendered longevity gaps signals weaker

[20] Higher elevations in Oaxaca/Chiapas

enabling conditions in the very territories most exposed to climate hazards; it reinforces why adaptation delivery platforms must be designed around women's time constraints and caregiving responsibilities. Poverty levels are also substantially higher in these states: under Mexico's multidimensional poverty measurement for 2024, Chiapas (66.0%), Guerrero (58.1%), and Oaxaca (51.6%) report the highest poverty shares nationally. This matters for adaptation because poverty directly limits the ability of coffee households—especially women—to finance renovation, invest in climate-resilient planting material, adopt soil and water conservation, and purchase post-harvest equipment; without concessional, inclusive finance and risk-sharing mechanisms, adoption remains low and recovery cycles deepen vulnerability.

Labour-market statistics from INEGI's ENOE state bulletins provide a concrete view of gendered constraints that are directly relevant to adaptation uptake. In the fourth quarter of 2024, women's economic participation was far below men's in all three states: Chiapas shows a total participation rate of 54.1%, with women at 31.4% vs men at 80.3%; Oaxaca totals 56.3% (women 42.9%, men 72.5%); and Guerrero totals 60.3% (women 48.5%, men 74.3%). These participation gaps matter for adaptation because they reflect women's constrained access to paid work, time and mobility—factors that also restrict participation in Farmer Field Schools, access to climate advisories, engagement with producer organizations, and ability to meet administrative requirements for credit or certification. Unemployment rates appear relatively low, but low unemployment does not imply resilience when most work is informal. In the same quarter, unemployment was 2.8% in Chiapas (women 2.8%, men 2.8%), 1.9% in Oaxaca (women 1.5%, men 2.1%), and 1.3% in Guerrero (women 1.5%, men 1.1%). The stronger signal of vulnerability is informality: ENOE's informality rate (TIL2) is extremely high and consistently higher for women than men—Chiapas 69.9% (women 73.8%, men 66.9%), Oaxaca 71.8% (women 76.0%, men 67.4%), and Guerrero 71.6% (women 75.6%, men 67.5%). This matters for adaptation because informality is closely linked to lack of social protection, limited credit histories, and weak eligibility for formal financial products—precisely the barriers that prevent women smallholders from financing climate adaptation investments in perennial coffee systems.

Finally, intersectional gender constraints—especially relevant for Indigenous coffee landscapes—underline why gender-responsive adaptation must go beyond numeric participation targets. National evidence indicates women carry a disproportionate unpaid care burden (39.7 hours/week vs 18.2 for men), and Indigenous women carry even higher burdens (reported 44 hours/week). This matters for adaptation because without time-sensitive training design (scheduling, proximity, childcare where feasible), women's participation in climate-resilient production practices, post-harvest upgrading, and market engagement will remain structurally constrained. In addition, gender-based violence remains widespread (reported prevalence of 70.1% among women aged 15+), which can restrict mobility, safe participation, and access to services. This matters for adaptation delivery because projects must incorporate safe participation protocols, accessible grievance mechanisms, and culturally appropriate outreach—particularly in remote Indigenous areas—so that women can engage without added risk.

Gender mainstreaming is grounded in the project's contextual analysis and consultations, which recognize that women in Mexico's coffee territories—particularly **I**ndigenous and rural women—face persistent constraints related to limited recognition as producers, restricted access to land and finance, heavy unpaid care burdens, reduced mobility and safety concerns, and underrepresentation in producer organizations and extension systems. Gender mainstreaming is operationalized through clear participation and benefit targets, inclusive delivery modalities, and sex-disaggregated monitoring. The project targets at least 45% women among direct beneficiaries, and delivers adaptation services through 200 Farmer Field Schools (FFS) designed as the primary platform for adoption and peer learning, reaching 9,000 producers with at least 50% women and 30% youth while implementing explicit measures to enable women's meaningful participation (time-use sensitive scheduling, accessible locations, safe learning spaces, local languages/bilingual facilitation where relevant, and childcare support where feasible). The project will track progress through sex-disaggregated indicators across all components and incorporate qualitative and quantitative measures of women's participation, leadership, access to services, and benefits, consistent with AF guidance on gender-responsive results frameworks.

Across Component 1, gender is mainstreamed by ensuring women's equitable access to climate-resilient planting material, renovation packages, and ecosystem-based adaptation practices, including targeted support for women-led community nurseries and women's roles in pest management, soil conservation, and post-harvest quality control through FFS training and demonstrations. Under Component 2, gender mainstreaming focuses on addressing women's structural exclusion from finance by working with financial intermediaries and producer organizations to expand access to climate-aligned products and deliver gender-responsive financial literacy and capacity building, including measures to reduce administrative and institutional barriers and to strengthen producer organizations' managerial capacity so women can safely access and manage finance for adaptation investments. Under Component 3, the project mainstreams gender by enabling women's full participation in value chains and commercialization—supporting women's groups with access to quality-enhancing tools, training in traceability, certification pathways, digital tools, and participation in buyer linkages—while promoting women's representation in commercialization decision-making and strengthening opportunities for women-led enterprises. Finally, the project mainstreams gender through safeguards and accountability mechanisms that ensure safe and equitable participation, including GBV-sensitive measures, referral information where appropriate, safe meeting protocols, and confidential, gender-sensitive grievance channels, as well as training for project staff, extension agents, and local institutions on gender-responsive delivery and inclusive leadership.

Indigenous Peoples represent a significant share of the rural population in Mexico—39.2 million people (30.3%) self-identify as Indigenous and 7.4 million (5.9%) are speakers of Indigenous languages. In the project's target states (Chiapas, Oaxaca, Guerrero), Indigenous communities constitute the majority of smallholder coffee producers and live in territories with high levels of poverty, where Indigenous rural women experience poverty rates up to 75% and extreme poverty of 37%. These communities face structural disadvantages including geographic isolation, limited access to extension services, financial exclusion, language barriers, and higher exposure to climate risks such as drought, irregular rainfall, erosion, and pest outbreaks. Indigenous women in particular bear disproportionate burdens, with higher unpaid care workloads and lower access to services, which restrict their capacity to adopt climate-resilient practices.

A5. Vulnerability drivers

Climate vulnerability in Mexico is shaped not only by exposure to hazards, but also by deep structural inequalities. Poverty, marginalization, gender inequality, ethnicity, and weak access to services and assets strongly influence the capacity of households and communities to prepare for, absorb, and recover from climate shocks. As a result, climate impacts are highly uneven, and the most vulnerable populations face the greatest constraints to adaptation. This is particularly evident in rural areas. Although Mexico is an upper-middle-income country, rural areas account for a disproportionate share of extreme poverty, especially in the south and southeast. Indigenous Peoples are particularly affected, and these inequalities intersect directly with climate vulnerability, where livelihoods depend on natural resources and climate-sensitive agriculture.

Socio-economic drivers

Socio-economic vulnerability is particularly acute in producer municipalities. The social importance of coffee is underscored by its close association with marginalisation and Indigenous territories, where 59.4% of the 588 coffee-producing municipalities registered in the programme face *high* or *very high* levels of marginalization.[21][22] In these territories, coffee is not only a productive activity but also a key source of livelihoods that supports household income, local employment, and social stability.

At the same time, producers face major financial exclusion. Many lack formal land titles, credit histories, and access to financial products suited to smallholder realities. Geographic dispersion, weak

[21] Idem.
[22] Vázquez-López, P. 2023. Characteristics of coffee producers and plantations in the northern region of the state of Chiapas. Rev. Mex. Cienc. Agríc vol.13. https://doi.org/10.29312/remexca.v13i28.3266

infrastructure, and low financial literacy further limit access to credit and insurance. Access to formal credit remains extremely limited, with fewer than three in 10,000 poor rural households able to obtain financing. These constraints translate into low productivity, limited capacity to absorb shocks, and chronically low incomes. As a result, key crops such as coffee, are highly exposed to both climate-related and market shocks.[23]These constraints make financial inclusion a critical enabling condition for climate adaptation, especially where producers need to invest in renovation, resilient planting material, water management, or post-harvest technologies.

Environmental drivers

Coffee systems in the target areas are closely linked to the condition of the surrounding ecosystems that sustain them. Forest loss, declining shade cover, soil degradation, erosion, and biodiversity loss are weakening key ecosystem services, including water regulation, microclimate moderation, soil fertility, pollination, and natural pest control. As these services decline, coffee systems become more vulnerable to heat stress, rainfall variability, water deficits, and pest and disease outbreaks, with direct consequences for productivity and resilience. Addressing climate vulnerability in coffee landscapes, therefore, requires an ecosystem-based approach that restores and protects the ecological functions underpinning sustainable production.

These structural inequalities are highly relevant for adaptation. Small farm size, dependence on rainfed production, low and unstable incomes, weak bargaining power in value chains, and unequal access to finance and extension services all reduce producers' capacity to invest in renovation, climate-resilient practices, improved planting material, and post-harvest upgrades. In this context, climate change acts as a threat multiplier: it worsens existing constraints in already fragile production systems and increases the risk of declining productivity, livelihood insecurity, and eventual abandonment of coffee cultivation.

The recurrence of climate shocks of this magnitude represents a critical risk to the economic viability of small producers (under 5 hectares). Limited access to capital and strong dependence on annual harvest income mean that successive production losses can lead to the permanent abandonment of farming activities, significantly reducing livelihood options. These challenges are further exacerbated in high-altitude, isolated, and highly marginalized areas, where the capacity for productive transformation toward climate-adapted varieties is constrained by high upfront costs and limited technical support.

A6. Project areas

Project area selection rationale

Project areas were selected based on: (i) **high climate vulnerability** as assessed by INECC[24], to concentrate support where exposure, sensitivity, and limited adaptive capacity are greatest; (ii) **high share of smallholder coffee producers** (less than 5 ha), prioritizing municipalities where smallholders—who are typically the most affected by climate impacts and have the fewest buffers—are most prevalent; (iii) **observed evidence of productivity decline or climate-related stress** in coffee systems; (iv) **presence of ECAs/cooperatives/microfinance institutions** to ensure implementation feasibility and sustained local engagement (areas without ECAs were excluded); (v) **no geographic overlap** with ongoing/future projects (in particular the GCF projects AROMA and BALSAS) to ensure additionality and avoid duplication; and (vi) **alignment with government territorial priorities** to reinforce country ownership and sustainability. Figure 2 shows the coffee producing areas in Mexico and the vulnerability to climate change at municipal level (INECC, 2022).

Selected project areas

[23] Vázquez-López, P. 2023. Characteristics of coffee producers and plantations in the northern region of the state of Chiapas. Rev. Mex. Cienc. Agríc vol.13. https://doi.org/10.29312/remexca.v13i28.3266

The preliminary site selection includes the states of Chiapas, Guerrero and Oaxaca in the South of Mexico (Table 4). These are the states where most coffee producers are small farmers since more than 90% of production units at the state level are below 5 hectares. Overall, 20 municipalities are selected, characterised by coffee production in small Production Units (under 5 ha), where the maximum temperature of the warmest quarter is projected to rise beyond the limits of coffee tolerances for good production. The selected production zones largely overlap with areas of high climate vulnerability and are characterized by traditional shaded, rainfed systems, low productivity, limited value addition, and heavy dependence on intermediaries, which reduces producer incomes.[25]

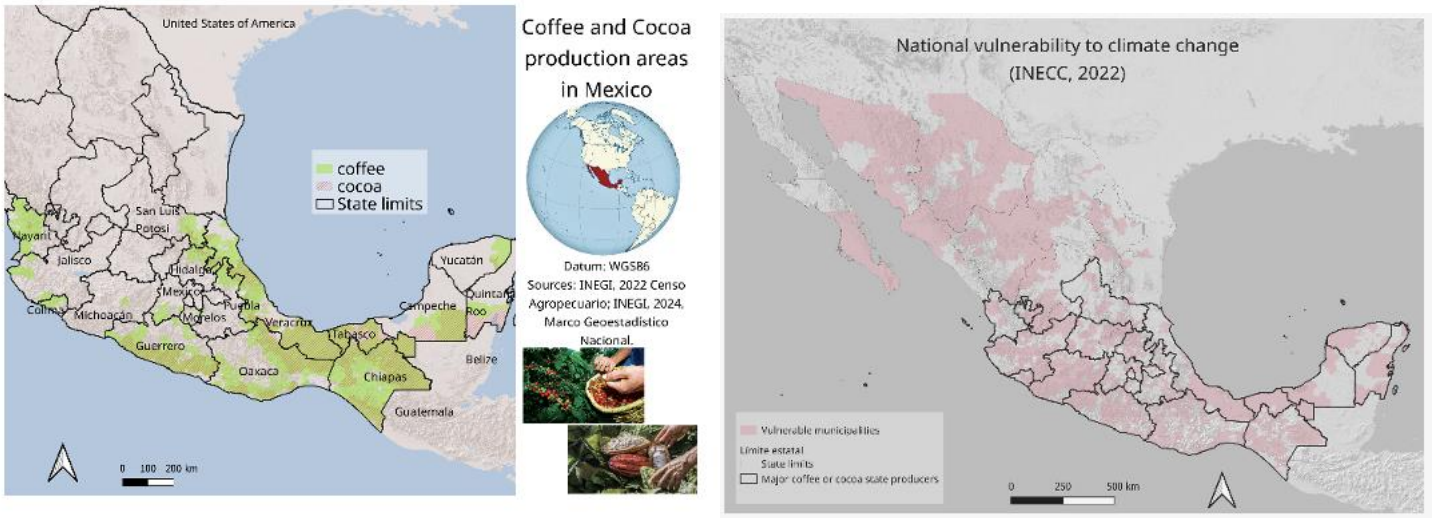


Figure 2. Maps of the coffee production areas and vulnerability to climate change at the municipal level.

[25] Government of Mexico, Programa Institucional de Alimentación para el Bienestar 2025-2030. Available at: https://www.gob.mx/cms/uploads/attachment/file/1025975/PI_APB_2025-2030.pdf

Table 4. Preliminarily project municipalities

State	#	Municipality	Vulnerability index	Population (2024)	Indigenous population by self-identification (2020)	Afro-mexican population (2020)	Population employed in agricultural and forestry activities (2020)	Percentage population in extreme poverty (%)	National marginalization index[1] (2020)	Coffee area (ha; 2022)	Coffee productive units (2022)
Chiapas, Soconusco region	1	Motozintla		82,320	5,715	144	6,340	12.0	Medium	11,979	3,556
	2	Escuintla		31,353	1,827	88	3,562	20.1	High	6,881	2,125
	3	Villa Comaltitlá		32,049	1,021	229	3,576	13.7	High	2,442	691
	4	Unión Juárez		16,827	1,543	25	2,093	17.4	Medium	3,592	1,859
	5	Tapachula		373,399	8,052	4,287	10,819	17.1	Low	23,815	8,039
	6	Huehuetán		38,381	908	110	4,312	13.4	High	2,623	804
	7	Tuzantán		30,287	2,099	77	2,510	21.6	High	4,935	1,837
	8	Tuxtla Chico		42,005	936	1,404	2,824	19.5	High	1,820	1,129
	9	Cacahoatán		56,614	800	234	3,141	29.6	Medium	9,538	5,548
	10	Huixtla		55,161	3,881	239	3,171	12.3	Medium	4,051	1,186
		Subtotal Chiapas		**758,396**	**26,782**	**6,837**	**42,348**			**71,677**	**26,774**
Oaxaca, Los Loxicha region	1	Santa Catarina Loxicha		3,579	3,073	41	392	53	High	138	84
	2	San Bartolomé Loxicha		2,225	2,072	7	411	27	High	226	83
	3	San Pablo Coatlán		4,426	2,965	10	538	30	High	514	219
	4	San Pedro el Alto		5,063	4,147	21	750	41	Very high	208	124
	5	Candelaria Loxicha		11,890	9,503	289	1,260	45	Very high	1,774	665
	6	San Agustín Loxicha		28,045	23,478	417	3,466	65	Very high	4,804	2,281
	7	San Baltazar Loxicha		3,358	2,616	16	468	25	Medium	78	54
		Subtotal Oaxaca		**58,586**	**47,854**	**801**	**7,285**			**7,741.8**	**3,510**
Guerrero, Mountain region	1	Malinaltepec		26,804	26,712	6,379	4,216	50	Very high	4,993	3,068
	2	Tlacoapa		10,508	8,907	153	1,821	50	Very high	59	58
	3	Acatepec		43,304	35,973	355	9,381	62	Very high	982	554
	4	Iliatenco		11,894	10,538	1,072	1,872	39	Very high	3,959	2,691
		Subtotal Guerrero		**92,510**	**82,130**	**7,959**	**17,290**			**9,994**	**6,371**
		Total		**909,492**	**156,766**	**15,597**	**66,923**			**89,412**	**36,655**

A.7 Target groups

The proposed project will directly benefit an estimated **9,000 coffee-producing households** (approximately **36,000 individuals**) across **20 municipalities** in **Chiapas, Oaxaca, and Guerrero**. These households represent the core population of smallholder producers sustaining coffee-based livelihoods in highly climate-vulnerable territories affected by drought, irregular rainfall, soil degradation, and increasing pest and disease pressure.Coffee producers in targeted regions have an average age of 54 years and are almost equitably divided between men and women.

A large share of beneficiaries are expected to be **Indigenous Peoples**, particularly in Oaxaca and Guerrero, and in parts of Chiapas, where coffee is closely linked to livelihoods, cultural identity, and territorial stewardship. Therefore, the project aims for **at least 60 per cent of the direct beneficiaries to be Indigenous Peoples** and will tailor support to their cultural, territorial, and linguistic contexts.

Women producers are another key beneficiary group, with the project aiming for at least **40 per cent of direct beneficiaries to be women**. Women play essential roles in coffee production, seedling management, harvesting, post-harvest processing, and local commercialization, but they often face limited land ownership, restricted access to credit and technical assistance, and unequal unpaid care burdens that constrain their participation in training, decision making, and economic opportunities.

The project will also target **rural youth**, who are expected to represent at least **20 per cent of direct beneficiaries**. Youth are critical to the renovation of coffee systems, the adoption of climate-resilient practices, and the longer-term sustainability of the sector, yet they often face barriers in access to land, finance, skills development, and attractive livelihood opportunities. By strengthening their technical, organizational, and market-related capacities, the project will support greater youth participation in resilient and more competitive coffee value chains.

In addition to producer households, the project will strengthen a range of **institutional beneficiaries** that are essential for scaling and sustaining adaptation results. These include approximately **200 Farmer Field Schools**, around **100 coffee producer organizations and cooperatives** across the three states, and **five local financial institutions**. These actors will benefit from strengthened technical capacities, participatory planning, business plan preparation, financial and risk analysis, and improved ability to support producers with climate-resilient services, finance, and market linkages. Municipal authorities and local technical service providers will also benefit through stronger capacities to support local adaptation planning and implementation.

Beyond the direct beneficiaries, the project is expected to generate indirect benefits for **more than 11,000 additional coffee-producing households**, including through knowledge management, replication of practices, and wider dissemination of seasonal agroclimatic information through the Mesas Técnicas Agroclimáticas. Additional indirect beneficiaries will include other coffee value chain actors, who will benefit from improved traceability, certification, and market differentiation. Overall, the project is designed to support the diverse social and institutional actors that sustain the coffee economy in southern Mexico, with a particular focus on those facing the greatest climate vulnerability and the strongest barriers to resilience.

A.8 Barriers to adaptation

Barrier 1. Limited access to resilient planting material and adaptation practices. Ageing plantations, low resilience to rising temperatures and rainfall variability, degraded soils, declining shade cover, erosion, and weakened ecosystem functions make coffee systems highly vulnerable to drought, heat, pests, and productivity decline. Producers also lack sufficient access to resistant and climate-resilient varieties, quality nursery systems, and practical support to renovate plantations, and adopt soil, water, and landscape restoration measures at scale.

Barrier 2. Limited access to timely, locally actionable climate and phytosanitary information. Smallholder coffee producers often have limited access to climate information that is sufficiently localized, timely, and practical to inform real farm decisions. Even where seasonal forecasts or pest and disease alerts exist, these are not always translated into coffee-specific advisories that producers can use to adjust planting, pruning, shade management, harvest timing, drying practices, or responses to rust and borer outbreaks. The problem is compounded by weak last-mile communication systems, limited local monitoring, and insufficient capacity among producers and extension services to interpret and act on early warning signals.

Barrier 3. High post-harvest losses and weak resilience of processing systems due to lack of or inadequate technologies. Coffee producers in the target areas face growing risks during harvesting, drying, handling, and storage due to increasing rainfall variability, more frequent humid conditions, and unreliable water availability. At the same time, many producers rely on basic or poorly adapted post-harvest infrastructure and have limited access to low-cost technologies that could protect quality under variable climatic conditions. When climate-related post-harvest losses reduce quality and income, producers have fewer resources and incentives to invest in the practices needed to adapt their production systems over time.

Barrier 4. Limited coverage and institutional capacity to scale FFSs and INIFAP technical support. Farmer Field Schools (FFSs) have been used for many years because they remain one of the most effective approaches for strengthening farmers' practical decision-making, experimentation, and peer-to-peer learning in complex production environments. While the FFSs and INIFAP provide a strong platform for technology transfer and applied learning, their territorial coverage, staffing, and multi-year continuity of technical accompaniment are insufficient to reach highly vulnerable municipalities at the scale and intensity required. Thus adoption of resilient practices remains low because producers lack continuous hands-on support, peer learning, demonstration sites, and inclusive training modalities that reach women, youth, and Indigenous communities.

Barrier 5. Weak organizational capacity of small-scale producers limits market access and income stability. Small-scale coffee producers often rely on weakly organized groups or cooperatives that lack the capacity to coordinate production, aggregate volumes, ensure consistent quality, manage traceability, and negotiate effectively with buyers. This limits access to more stable and rewarding market channels, undermines income stability, and reduces producers' ability to respond collectively to climate and market risks.

Barrier 6. Limited access to inclusive and climate-adapted finance. Small-scale producers face limited access to credit due to limited collateral, weak credit history, low financial literacy, weak cooperative capacity, and financial products not tailored to coffee adaptation investments. As a result, even where adaptation options are technically viable, producers are frequently unable to mobilize the upfront investment needed to adopt them, particularly where returns depend on medium-term improvements in productivity, quality, or resilience.

B. Project/Programme Objectives:

Project Goal: To strengthen the long-term climate resilience of vulnerable small-scale coffee producers, and of the ecosystems that sustain their livelihoods, in Mexico's priority production landscapes by 2032. This will be achieved through the adoption of ecosystem-based adaptation (EbA) practices, the development and uptake of climate-resilient planting material, inclusive access to climate risk financing, and sustained market access that rewards climate-resilient production. Together, these measures will help stabilize productivity and quality, reduce climate-driven livelihood losses, and generate biodiversity and ecosystem services co-benefits in target territories, with an initial focus on high-vulnerability, smallholder-dominated areas such as Oaxaca, Guerrero, and Chiapas.

Objectives: By 2032, smallholder coffee producers in the selected municipalities achieve increased adaptive capacity and reduced vulnerability to rising temperatures, rainfall variability, longer dry periods, and worsening pest and disease pressure through:

1) Strengthen the climate resilience of smallholder coffee production systems in priority landscapes through the adoption of climate-resilient varieties on at least 3,000 ha, ecosystem-based adaptation practices, and climate-informed farm management on at least 2,500 ha, restoration of 2,500 ha degrades land and by at least 9,000 producers.
2) Enhance the adaptive capacity and livelihood resilience of vulnerable smallholder coffee producers by improving inclusive access to climate finance, strengthening at least 100 producer organizations, and expanding market access for coffee produced under climate-resilient practices.

A substantial portion of the total project budget (70 per cent) is directed to Components 1, and 2 , where investments deliver direct resilience gains for the most climate-affected small-scale coffee producers through farm- and landscape-level EbA measures, renovation with climate-resilient varieties, and post-harvest innovations and infrastructure that protect quality and reduce losses under increasing climate variability. These physical and technical investments are deliberately paired with "enabling" support to ensure results are sustained and scalable.

C. Project/Programme Components and Financing:

Table 5: Summary of Project Components, Outputs, Outcomes and Budget

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Building resilience of smallholder coffee production systems and post-harvest processes	1.1. Coffee production systems upgraded for climate resilience through renovation with climate-resiliente and resistant varieties and EbA practices	1. Vulnerable smallholder coffee producers, including women, youth, and Indigenous groups, adopt climate-resilient practices that strengthen coffee production systems, landscapes, and the coffee value chain.	$ 7 000 000
	1.2. Coffee-specific agroclimatic and phytosanitary advisories inform producers´ adaptation actions		$ 511 521
	1.3. Climate-resilient post-harvest processing technologies validated and adopted		$ 2 500 000
	1.4 Smallholder coffee producers trained in climate-resilient technologies and practices through upgraded Farmer Field Schools		$ 2 500 000

2. Improving access to inclusive climate financing for small-scale coffee producers	2.1. Access to financing resources, including credit, tailored to small-scale coffee producers is expanded	2. Through strengthened local financial institutions, small coffee producers have improved access to inclusive financing for climate-resilience agriculture	$ 4 638 709
	2.2 Managerial, organizational and financial capacity of farmer groups and cooperatives is strengthened		$ 1 000 000
3. Capacity strengthening for sustained market access and knowledge management	3.1 Capacity strengthening for market pathways that recognize and reward climate resilience	3. Adaptive capacity of smallholder coffee producers strengthened through access to differentiated markets for climate-resilient coffee and improved knowledge and peer-learning	$ 800 000
	3.2 Enhance linkages between producers and buyers, for an aggregated volume of produce from project-aligned farms, incorporating a resilience premium.		$ 1 200 000
	3.3 Knowledge management and peer learning for climate-resilient coffee systems		$ 702 305
4. Project Execution cost			$ 2 188 940
5. Total Project Cost (9.5% of total project cost)			$ 23 041 475
6. Project Cycle Management Fee charged by the Implementing Entity (8.5% of total project cost)			$ 1 958 525
Amount of Financing Requested			$ 25 000 000

D. Projected Calendar:

Table 6: Project Milestones and Timeline

Milestones	Expected Dates
Start of Project/Programme Implementation	2027
Mid-term Review (if planned)	2030
Project/Programme Closing	2033
Terminal Evaluation	2034

E. Theory of change

The project responds to the main barriers that prevent smallholder coffee producers in southern Mexico from adapting effectively to climate change: ageing and climate-sensitive production systems, limited access to coffee-specific climate information and technical support, weak access to finance for adaptation investments, and insufficient commercial capacity to access differentiated markets that can reward resilient production.

Causal pathway 1 (Component 1):

IF smallholder coffee production systems are upgraded through renovation with climate-resilient planting material, ecosystem-based adaptation practices, improved post-harvest technologies, coffee-specific agroclimatic advisories, and strengthened Farmer Field Schools, using gender-responsive and culturally appropriate approaches, **THEN** coffee producers will be better able to anticipate, absorb, and respond to climate risks, **RESULTING IN** increased adaptive capacity and reduced climate vulnerability

of coffee production systems in priority landscapes.

This pathway tackles the biophysical and knowledge barriers to resilience. It enhances farm and landscape management through climate-resilient planting material, shade, soil and water management, restoration of priority areas, climate-informed decision-making, and participatory learning. Farmer Field Schools act as the main platform for adoption, peer learning, and adaptive management, with measures to improve women's participation and to adapt support to Indigenous contexts and knowledge systems.

Causal pathway 2 (Component 2):

IF local financial institutions, producer organizations, and cooperatives are strengthened to provide and access financial products tailored to climate-resilient coffee production, while addressing barriers faced by women and Indigenous producers **THEN** smallholder producers will be better able to invest in adaptation measures, **RESULTING IN** improved access to inclusive finance for climate-resilient agriculture and stronger economic resilience among coffee producers.

This pathway addresses the financial barriers to large-scale adoption. It assists local financial entities in better evaluating climate and agricultural risks, while enhancing producer groups' organisational, managerial, and financial capacities so they can access funding for renovation and small-scale processing projects, including for groups that are often excluded from finance and decision-making**.**

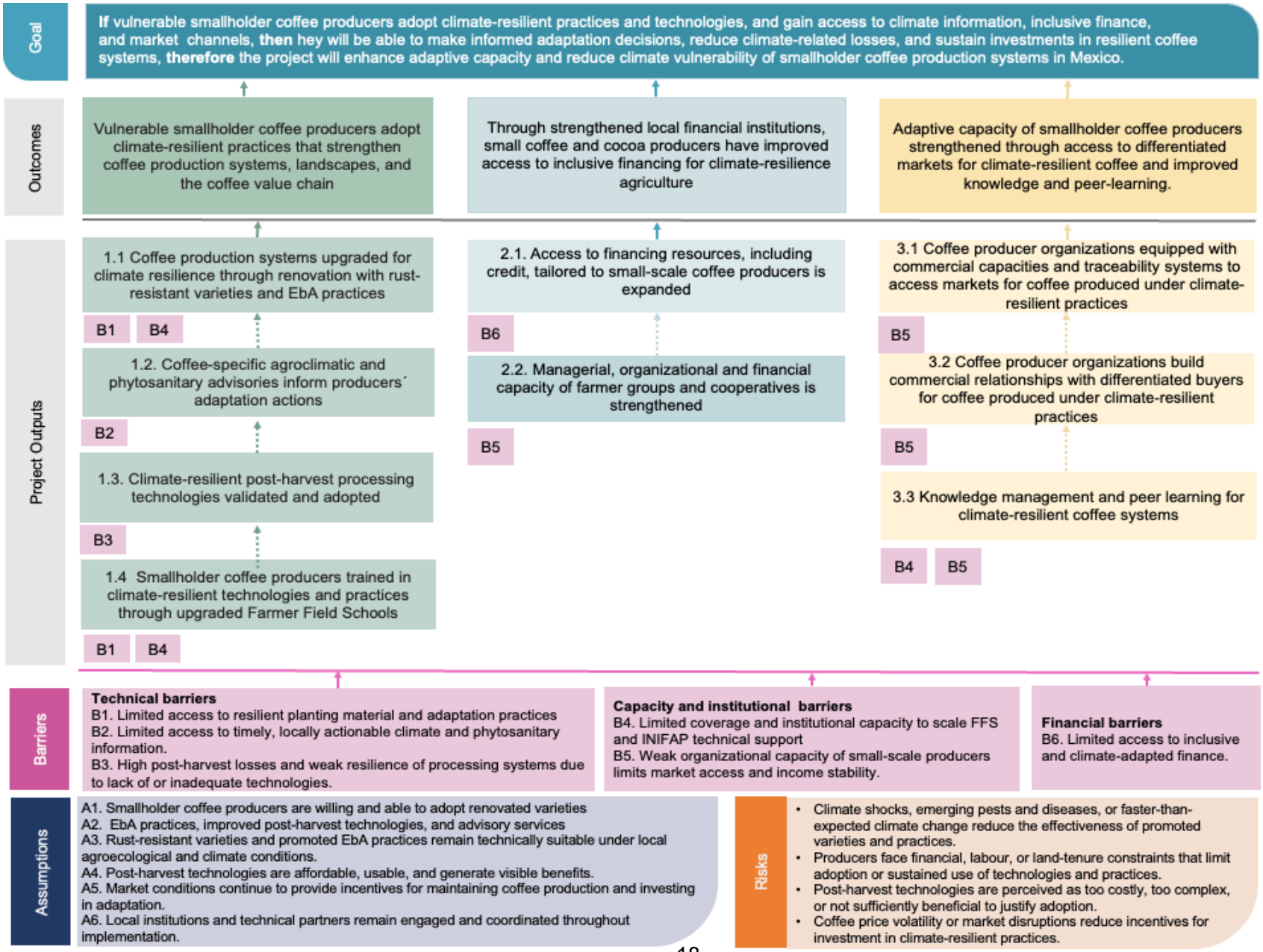
Causal pathway 3 (Component 3):

IF coffee producer organizations are strengthened with commercial capacities, traceability systems, buyer linkages, and knowledge tools that connect climate-resilient production to differentiated markets, with the inclusion of women and Indigenous producers in commercial opportunities and benefit-sharing **THEN** producers will have more stable and rewarding market opportunities for quality, traceable coffee produced under climate-resilient practices, **RESULTING IN** stronger livelihood resilience, reduced income volatility, and greater capacity to sustain adaptation investments over time.

This pathway tackles market barriers that undermine the sustainability of adaptation. By connecting climate-resilient production to higher-value and more reliable market channels, the project reduces income volatility and strenghtens the economic foundation for ongoing investment in resilience, while supporting women's economic participation and recognizing Indigenous identity and territorial origin as market assets where relevant**.**

The project's Theory of Change is iterative and assumes that climate risks, producer needs, and market conditions will continue to evolve. For this reason, the project invests not only in specific adaptation measures but also in the systems, capacities, and feedback loops needed to adjust responses over time. By combining resilient production practices, coffee-specific climate services, inclusive finance, stronger market access, and knowledge management, the project supports a dynamic process that enables smallholder producers to better adapt to climate risks while strengthening the long-term viability of their livelihoods, through a gender-responsive and culturally appropriate approach across all components

Figure 3. Theory of Change diagram.



PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project/programme components

Component 1: Building resilience of smallholder coffee production systems and post-harvest processes

Outcome: *Vulnerable smallholder coffee producers, including women, youth, and Indigenous groups, adopt climate-resilient practices that strengthen coffee production systems, landscapes, and the coffee value chain*

Component 1 addresses the key barriers that keep small-scale coffee producers highly vulnerable to climate change: climate-sensitive and degraded production systems; limited access to resilient planting material and EbA practices; inadequate climate and pest/disease risk information; and high post-harvest losses driven by humidity variability and water constraints. It will reduce vulnerability and strengthen adaptive capacity by combining farm- and landscape-level EbA transformation with coffee-specific climate and phytosanitary risk management, while scaling low-cost post-harvest technologies that protect quality, cut losses, and stabilize incomes to enable reinvestment in adaptation. Delivery is anchored in upgraded Farmer Field Schools (FFS), ensuring sustained adoption through hands-on training, demonstrations, peer learning, and extension support, with a gender- and youth-responsive approach to secure equitable access and leadership.

Output 1.1 Coffee production systems upgraded for climate resilience through renovation with climate-resiliente and resistant varieties and EbA practices

This output tackles the main drivers of vulnerability in smallholder coffee systems, including climate-sensitive ageing plantations with weak rust resistance; degraded soils and weakened ecosystem functions, while removing a key barrier to adaptation, namely the slow uptake and scaling of climate-resilient varieties and low adoption of practices needed to restore microclimate regulation, soil moisture retention and landscape resilience.

The Output will reduce climate vulnerability by combining (i) a stronger genetic base (climate resiliente and resistant varieties) with (ii) Ecosystem-based Adaptation (EbA) practices at farm and landscape scales, supporting the progressive renovation of approximately 3000 ha of coffee productive units in the most climate-affected zones, 2500 ha will apply EbA practices and the restoration of 2500 ha of degraded land. Renovation will be implemented as a full resilience package, transitioning farms to diversified agroforestry systems that stabilize yields and quality under climate variability and reduce exposure to heat, drought and climate shocks.

To strengthen the genetic base, the project will partner with INIFAP and the private sector to validate available and already certified rus-resistant and resilient coffee varieties (e.g. *Oro Azteca, Talisán, Sarchimor, IAPAR 59*, etc.) and multiply them through strengthened community nurseries upgraded with climate-adaptive improvements and quality-control protocols, linked to FFS as applied training hubs. EbA measures will follow validated practices, including increased shade, soil cover, and organic inputs to improve soil moisture retention, reduce erosion, and enhance resilience. A gender-responsive approach will ensure women coffee producers and workers benefit equitably from inputs, renovation support and capacity building.

Indicative activities:

- **Select and validate coffee resilient and resistant varieties through multi-site demonstration plots**, monitoring yield stability under climate variability, pest and disease resistance, and quality.
- **Develop and apply multiplication protocols for the planting material,** including traceability and quality-control measures to maintain genetic purity during propagation.
- **Upgrade community nursery infrastructure with climate-adaptive improvements** to ensure consistent seedling quality under variable temperature and rainfall. Targeted support for women-

managed nurseries or women's groups where applicable.

- **Implement phased renovation of coffee production units** using certified climate resilient and resistant planting material, ensuring transparent and inclusive beneficiary selection.
- **Improve agroforestry systems**, including selection and planting of native or producer-preferred shade species, with attention to species choices that generate co-benefits valued by women where relevant.
- **Apply soil conservation measures** to improve infiltration, soil moisture retention, and fertility.
- **Conduct participatory landscape risk mapping and prioritization** (e.g., erosion hotspots, riparian buffer gaps, connectivity corridors) to identify where restoration will deliver the highest resilience gains for coffee landscapes.
- **Restore and revegetate priority riparian areas and degraded slopes** to improve watershed regulation, reduce sedimentation and flood impacts, and enhance landscape connectivity and biological pest control.

Output 1.2: Coffee-specific agroclimatic and phytosanitary advisories inform producers´ adaptation actions

This Output addresses the barrier of limited access to timely, locally actionable climate and pest/disease risk information—combined with weak capacity to translate risk signals into rapid farm and post-harvest decisions. It will do so by operationalizing agroclimatic services for coffee at seasonal and daily time horizons.

- **Seasonal agroclimatic services** will be anchored in the Agroclimatic Technical Working Groups (Mesas Técnicas Agroclimáticas)[26], which will integrate coffee-specific needs into seasonal outlooks and translate them into practical implications for coffee management (e.g., likely timing of rains, drought probability, humidity patterns, and risk windows for rust/borer). Building on this the FFS will facilitate *Seasonal Participatory Scenario Planning* with producers so seasonal information is converted into concrete decisions and contingency plans (e.g., renovation and nursery timing, shade/pruning calendars, labour planning for harvest, and preparedness for wet drying conditions).
- **Daily/short-term services** will be provided through a low-cost community early warning protocol that uses local monitoring and simple thresholds to trigger immediate actions during climate-sensitive windows, especially harvest and drying (e.g., switching to covered/modular drying, tightening moisture and storage hygiene, adjusting harvest schedules, and escalating agroecological IPM).

This output will complement and strengthen Mexico's existing, Nacional System for Phytosanitary Epidemiological Surveillance (SINAVEF)[27] by operationalizing a community "last-mile" protocol through FFS that translates official coffee rust risk information into specific triggers and rapid response actions. A gender-responsive approach will ensure women and youth have equal access to advisories and leadership roles. Indicative activities:

- **Create a coffee workstream within the Agroclimatic Technical Working Groups (Mesas Técnicas Agroclimáticas)** by defining a coffee decision calendar and priority coffee risk questions, and by ensuring participation of coffee extension agents and FFS/producer representatives in the relevant Mesa sessions.
- **Co-produce and disseminate coffee-specific seasonal advisories** (rainfall onset/cessation, drought/humidity outlook, rust/borer risk windows) as part of the Working Groups.

[26] Mesas Técnicas Agroclimáticas: https://www.gob.mx/agricultura/acciones-y-programas/mesas-agroclimaticas
[27] Nacional System for Phytosanitary Epidemiological Surveillance (SINAVEF): https://prod.senasica.gob.mx/SIRVEF/

- **Facilitate Seasonal Participatory Scenario Planning through FFS** to convert seasonal outlooks into agreed farm and value-chain decisions (e.g., nursery/renovation timing, shade/pruning calendars, harvest labour planning, and post-harvest preparedness).
- **Establish a low-cost community monitoring network** (e.g., manual rain gauges and simple temperature/humidity observations) and define routines for recording, sharing, and interpretation.
- **Define and test an early action protocol** linking short-term signals to immediate actions across farm and post-harvest stages within the FFS.
- **Operationalize communication channels suited to local conditions** (e.g., WhatsApp/SMS groups, community radio and notice boards at collection points).

Output 1.3 Climate-resilient post-harvest processing technologies validated and adopted

This output will address the barriers of climate-driven quality and loss risks during drying, handling, and storage, and unreliable and inefficient water access for processing and hygiene, which together increase spoilage and contamination, affecting the income of smallholders. Activities are designed to strengthen climate resilience along the coffee value chain by scaling low-cost, locally appropriate post-harvest innovations that protect bean quality under increasing climate stress and reduce post-harvest losses. In doing so, it will stabilize producer incomes, enabling smallholders to better absorb climate shocks, recover faster after adverse weather, and reinvest in on-farm adaptation measures, thereby strengthening their adaptive capacity. The project will upgade or establish 200 FFS, which will serve as the primary platform for technology transfer, peer learning, and participatory validation to support adoption and scaling.The climate resilient post-harvest technology will be installed in each of the FFS to give the chance to aall producers members of the FFS to use them.

Indicative activities:

- **Validate and scale climate-adapted drying solutions through FFS** (e.g., depulpers, raised drying beds, improved solar dryers, modular systems to control humidity and reduce fungal risk).
- **Pilot and promote improved storage and handling practices/equipment** to reduce moisture reabsorption, contamination, and quality loss during collection and marketing.
- **Support circular bio-input production from processing residues** (e.g., compost, biofertilizers) and integrate their use into on-farm soil fertility and moisture retention practices.
- **Document performance** (e.g., loss reduction, quality improvements, cost/benefit) **and develop practical guidance** for replication and scaling through FFS.
- **Implement on-farm water harvesting and infiltration practices** (e.g., micro-catchments, infiltration trenches, rainwater capture and storage) to improve water availability for production, nurseries and farm operations during dry periods.

Output 1.4 Smallholder coffee producers trained in climate-resilient technologies and practices through upgraded Farmer Field Schools

This output will address barriers on limited access to resilient planting materials and adaptation practices, as well as access to technical and extension services. It will strengthen adaptive capacity by upgrading existing FFS and forming new ones where needed, reaching a total number of 200 FFS as the project's primary platform for applied learning, peer exchange, and continuous problem-solving under changing climate conditions. It will reach 9,000 coffee producers (at least 50% women and 30% youth) and put in place explicit measures to ensure women and youth participation and leadership. Through FFS, producers will receive hands-on coaching to implement EbA practices alongside climate-resilient post-harvest management.

The enabling system for the sustained adoption of climate-resilient practices will be strengthened by training 200 extension agents and at least 200 lead farmers as facilitators; with special attention to

have women lead farmers. Demonstration/learning sites linked to FFS will be established where producers can test and refine practices locally. To reduce participation barriers, the project will apply inclusive training modalities (timing/location suitable for women's workloads, accessible materials, safe learning spaces, local languages and, where relevant, childcare support) and link youth engagement to "Jóvenes Construyendo el Futuro" to support youth placements/traineeships for skills development and local service provision.

Indicative activities:

- **Upgrade FFS as the core coffee adaptation delivery platform** (e.g., provide essential inputs, tools, facilitator support, curricula, learning materials).
- **Train extension agents and lead farmers as FFS facilitators** on climate risk, EbA practices, agroecological IPM, shade/soil/water management, and climate-resilient post-harvest handling.
- **Deliver hands-on FFS modules on climate-resilient production and post-harvest quality control,** including cherry selection, depulping, moisture-controlled drying, fermentation control, and humidity-controlled storage and basic classification.
- **Establish and/or strengthen demonstration and learning sites linked to FFS** (e.g., renovation plots, agroforestry/shade layouts, soil cover trials, post-harvest pilots).
- **Facilitate peer exchange networks between FFS and producer organizations** to accelerate learning and uptake across municipalities.
- **Improve participatory monitoring within FFS** (simple indicators on practice adoption, yields/quality, losses, water stress signals) to support adaptive management.
- **Support FFS territorial scaling** by defining criteria for expansion to new coffee contexts and adapting modules to different agroecological zones.
- **Provide technical supervision and training to community nursery operators and producer groups** on seedling production, grafting, with a focus on women and youth as lead farmers/facilitators.

Component 2. Improving access to inclusive climate financing for small-scale coffee producers

Outcome: *Through strengthened local financial institutions, small coffee and producers have improved access to inclusive financial services for climate-resilience agriculture*

Small-scale producers face major barriers to accessing finance for adaptation. Limited collateral, weak credit histories, low financial literacy, geographic dispersion, and the lack of financial products suited to smallholder and climate-risk conditions constrain investment in renovation, resilient planting material, water management, and post-harvest improvements. As a result, vulnerability remains high. In Mexico, around **87% of small-scale coffee producers lack access to financial services** (SADER, 2025).

This component builds on existing public programmes, particularly **Producción para el Bienestar (PpB)** and **Cosechando Soberanía (CS)**, to strengthen access to more inclusive and climate-relevant finance for coffee producers. PpB helps address underlying constraints affecting producers' financial inclusion, while CS, operated through Trust Fund for Rural Development - FIRA **(***Fideicomisos Instituidos en Relación con la Agricultura*),, provides an institutional platform for subsidized credit and guarantee instruments for small-scale producers, including those without conventional collateral. FIRA provides an important institutional platform to expand access to subsidized credit and guarantee instruments for small-scale producers, including those who lack conventional collateral. As a second-tier public development bank, FIRA works through first-tier banks, non-bank financial intermediaries

such as **SOFOM**[28] (*Sociedad Financiera de Objeto Múltiple*) and **SOCAP**[29] **(***Sociedades Cooperativas de Ahorro y Préstamo*), and specialized rural finance actors.

The project will not create a parallel finance scheme, but will strengthen these existing mechanisms so they can better serve climate-vulnerable coffee producers. It responds to three main gaps: **(i)** most available finance remains focused on short-term working capital rather than longer-term adaptation investments such as coffee renovation; **(ii)** many producer organizations still face administrative and technical barriers to accessing existing instruments; and **(iii)** upfront investment costs remain too high for many smallholders, even where credit is available.

The component will address these barriers through **technical assistance, institutional capacity strengthening, financial education, and linkage to existing credit and guarantee instruments**, working with FIRA and local intermediaries such as **FINDECA**[30] **(***Financiando el Desarrollo del Campo***)**. It also builds on evidence that group-based lending through producer organizations can improve access and repayment performance. In addition, combining credit with complementary grant or in-kind support — particularly for the input package required for coffee renovation, estimated at around 30% of total investment costs — can make adaptation investments more feasible for smallholders.

Overall, this component will enable more sustained and inclusive access to affordable finance for climate-resilient coffee production systems. By strengthening both the supply of and demand for appropriate financial services, it will help producers invest in adaptation, reduce their vulnerability to climate shocks, and improve the long-term sustainability of their livelihoods.

Output 2.1: Access to financing resources, including credit, tailored to small-scale coffee producers is expanded

This output will address key barriers to adaptation, namely a constrained access to affordable credit necessary for the renovation of the coffee trees as well as the low reinvestment capacity of coffee farmers, and the weak organizational capacity of coffee producers' organizations (associations, cooperatives).

This will be achieved by expanding access to climate-resilient financial products for coffee producers, including through strengthening the capacity of financial intermediaries, and providing technical assistance to coffee producers' organizations, as well as providing access to complementary grant resources so that producers are better able to invest in climate-resilient practices such as heat-tolerant coffee varieties, efficient water use systems, and agroforestry adaptation measures.

The project will work with FIRA and its network of local non-banking financial intermediaries, including FINDECA, to identify eligible cooperatives and other producers organizations to support enrollment in existing programs promoting access to inclusive financial services for climate-resilience agriculture, as well as providing technical assistance to meet administrative and compliance requirements to access these programs. A gender-responsive approach will ensure women and youth have equal access to advisories and capacity development opportunities.

The project will also complement these programs by providing in-kind resources (equipment, material, inputs) necessary to invest in the renovation of old and unproductive coffee trees. The project will also

28 Sociedad Financiera de Objeto Múltiple (SOFOM) is a non-banking financial entity specializing in granting loans, and operating under a flexible specialized model rather than a full-service banking license. They fill gaps in traditional banking, particularly for SMEs and remote areas.

29 Sociedades Cooperativas de Ahorro y Préstamo (SOCAP) are non-profit financial cooperatives supervised by the National Financial Regulatory Commission to offer savings and loan services to their members. These organizations promote financial inclusion, particularly in rural areas

30 FINDECA is a non-banking financial entity that has emerged from a large coffee producers cooperative (CEPCO). It currently provides techncial assistance and credit to approximately 15,000 organized smallholders in Chiapas and Oaxaca, over 98% of which have between 2-5 ha of shade-grown coffee, which is also certified-organic and fair-trade.

provide in-kind resources (equipment) to eligible coffee producer groups to finance investments for on-farm small-scale processing and value addition.

Indicative activities:

- **Screen eligible local financial institutions operating in targeted municipalities**, including non-banking financial intermediaries (SOFOM, SoCAP) and first-tier local banks.
- **Support the enrollment and accreditation of local financial institutions** with Federal (FIRA) and State level second-tier financial institutions, to ensure they have access to federal and state-level programs promoting climate resilience and sustainability.
- **Provide technical assistance to Local Financial Institutions** in targeted municipalities to strengthen their capacity to better assess agricultural and climate risk, so that they can offer targeted financial products, including to small-scale coffee producers.
- **Provide technical and administrative support to coffee cooperatives and associations**, willing to invest in renovating their coffee trees, to carry out the geo-localization of their members' agricultural plots, the dissemination of financing requirements, and administrative support with eligibility, including documentation.
- **Provide in-kind resources (inputs, material) to finance the renovation of coffee trees** to eligible small scale coffee producer groups (associations, cooperative) in targeted municipalities.
- Provide in-kind resources (equipment) **to finance investments for on-farm small-scale processing** and value addition to eligible small scale coffee producer groups (associations, cooperative) in targeted municipalities.

Output 2.2: Managerial, organizational and financial capacity of farmer groups and cooperatives is strengthened

This output will address key barrier to adaptation, such as weak organizational and managerial capacity of coffee producer organization, as well as the low financial literacy which leads to distrust and limited knowledge that many producers face when engaging with local financial institutions. This will be achieved by strengthening the capacity of these cooperatives to expand access to climate-resilient financial products for coffee producers, as well as provide financial education for their members.

The output will generate demand by equipping producers with the knowledge needed to understand loan terms, interest rates, repayment obligations, guarantee mechanisms, and risk management strategies. It will also focus on payment and budget management: teaching producers how to manage income and expenditures, plan repayments, and avoid over-indebtedness. A gender-responsive approach will ensure women and youth have equal access to training opportunities.

Where possible, the project will aim to partner with Educational Technologies companies or platforms that use technology to deliver digital education solutions, including mobile applications, online courses, interactive simulators, and educational videos.

Indicative activities will include:

- **Prepare a capacity development program** for identified priority farmer associations, groups, and cooperatives, focusing on a) strengthening their organizational and managerial capacity; b) strengthening the financial education and literacy of their members
- Regarding financial education, **training material will include modules on** how to access credit products and how these integrate guarantee and credit subsidy systems, enabling producers to make informed decisions.

- **Carry out the training at farmer group level, and at member level**, including by leveraging digital education solutions and mobile applications
- **Promote scaling up of financial education tools** via existing EdTech solutions, where available

Component 3: Strengthening market access for smallholder coffee producers practicing climate-resilient production

Outcome: *Adaptive capacity of smallholder coffee producers strengthened through access to differentiated markets for climate-resilient coffee and improved knowledge and peer-learning.*

Component 3 is the commercial pathway that completes the logic of Components 1 and 2: coffee produced under climate-resilient practices — including through the post-harvest quality improvements addressed in Component 1 and supported by improved financing -- needs a market outlet that pays for the quality and consistency those practices make possible. Without it, the adaptation investments made under Components 1 and 2 do not translate into stable incomes — and without stable incomes, producers cannot sustain those investments.

Three barriers stand between producers and these market channels: limited organizational and commercial capacity to negotiate with differentiated buyers — specialty roasters, direct trade buyers and certified supply chains paying premiums of 20–150% above commodity prices for traceable, quality coffee;[31] absent or weak traceability systems compatible with market and regulatory requirements; and limited market intelligence to identify which channels are realistic for each producer profile. By addressing these barriers, Component 3 stabilizes incomes, strengthens adaptive capacity through sustained investment in resilient practices, and delivers the livelihood resilience that makes the gains of Components 1 and 2 durable.

Output 3.1: Coffee producer organizations equipped with commercial capacities and traceability systems to access markets for coffee produced under climate-resilient practices

This output addresses the weak commercial and organizational capacity that prevents producer organizations from reaching differentiated markets — the key barrier that keeps climate-resilient production from translating into better incomes. Many organizations in the target areas are already organized and selling coffee, but lack the traceability systems, negotiation capacity and market knowledge to access premium channels. The output will strengthen the commercial foundations of at least 140 producer organizations — including cooperatives and associations in the target areas — reaching 4000 producers (at least 40% women, 30% youth). Training and capacity building will be delivered through FFS, ensuring linkage with the production resilience and post-harvest practices built in Component 1.[32]

The output will build commercial and traceability capacities through two interconnected tracks: equipping producer organizations to negotiate collectively with differentiated buyers, adapt curricula for specialty, certified and direct trade channels, and train 10 commercial extension agents and lead farmers (at least 40% women) as facilitators; and by implementing basic traceability systems — including lot-level recordkeeping compatible with differentiated market and regulatory requirements — building on Bioparcela[33] and lessons from prior market-linkage and traceability initiatives in the target regions.[34] This layer builds on the existing FFS/ECA platform and the 3C+D business fundamentals

31 Specialty Coffee Transaction Guide (2019), Emory University, reported in IICA, El mercado del cafe intrarregional en Mesoamerica, 2020. Premium range is coffee-specific: +5%-30% for differentiated/certified channels, +20%-150% for specialty-grade direct trade.

32 Because producer organizations vary in size, processing level, organizational maturity and market positioning, the project will develop organizational typologies and design differentiated technical assistance packages, advancing each organization one or two steps along the value chain rather than applying a uniform strategy.

33 Bioparcela was developed by SADER under the IKI-IBA project (*Integración de la Biodiversidad en la Agricultura*, GIZ/BMU, 2016–2022), enabling offline farm georeferencing, lot-level harvest records, production cost tracking and sustainability self-assessment at no cost to producers. A paired platform (Agrotraza) handles supply chain traceability across processing levels. Integration with SENASICA's official traceability system and Mexico's Sin Deforestar deforestation-free platform is underway.

34 IDB Technical Cooperation ME-T1367, *Scaling Climate Smart Transformation of Coffee Landscapes in Mexico*, implemented by Sustainable Harvest with IDB/FOMIN, World Coffee Research, IICA and SAGARPA, 2018–2025. The project found that connecting fragmented smallholder

module that SADER delivers, and complements the managerial and organizational capacity strengthened under Component 2 (Output 2.2).

Women will be supported as commercial leaders and negotiators, with equitable access to training, traceability tools and buyer relationships. Youth will be engaged through digital tools, specialty and e-commerce channels, and the economic opportunity that premium markets represent, making coffee farming a viable livelihood choice. Indigenous producers will be supported through culturally adapted and bilingual methodologies, with territorial identity, origin story and indigenous farming knowledge positioned as commercial differentiators.

Indicative activities:

- **Conduct a market intelligence study mapping national and international market channels**, their quality, traceability, volume and price requirements, and identifying realistic near-term market pathways by region and organizational profile. The study will combine primary and secondary data collection, including direct engagement with potential buyers, and will be initiated during full proposal development.
- **Train extension agents and lead farmers as commercial facilitators** on collective negotiation with differentiated buyers, specialty and direct trade curricula, quality positioning, certification requirements and price interpretation.
- **Assess and support certification pathways**, including multi-certification options (organic, Rainforest Alliance, 4C, Fairtrade) that maximize the value of each harvest across market segments via a single internal control system, covering not only pathway selection but the production practices, documentation and audit preparation that certification requires.
- **Design and implement basic traceability systems** in participating organizations using platforms such as Bioparcela[39] — an existing operational platform developed with GIZ/IKI-IBA support — and compatible tools, including lot-level recordkeeping and quality classification protocols; tools adapted for low-connectivity contexts and tested across literacy levels.
- **Design and deliver a commercial training program** on specialty, direct trade (national and export), certified and e-commerce channels, covering quality positioning, buyer communication, price interpretation and territorial and cultural identity as commercial differentiators, with dedicated modules for women, youth and indigenous producers using bilingual and culturally adapted methodologies where relevant.

Output 3.2: Coffee producer organizations build commercial relationships with differentiated buyers for coffee produced under climate-resilient practices

This output addresses the barrier that often remains even once commercial capacities are built: producer organizations still lack the buyer relationships, documented commercial strategies and negotiation experience needed to enter and maintain differentiated market channels on their own. Closing this gap is what makes Component 3's contribution to livelihood stability concrete: consistent access to buyers who pay premiums for quality coffee from climate-resilient farms generates more predictable income, reducing the volatility that otherwise forces producers to defer adaptation investment or exit coffee farming in difficult years. Output 3.2 is where the link between the productive resilience built in Component 1, the financial access enabled in Component 2, and the livelihood stability that makes sustained adaptation possible is closed in practice. The project will accompany 30 producer organizations in developing and consolidating 5-10 commercial agreements, supported by 10 commercial extension agents (at least 40% women) deployed in the target areas.

Indicative activities:

co-operatives to specialty markets requires simultaneous investment in information systems, ROI-based decision tools and direct buyer engagement — the combination this output replicates and scales. https://www.iadb.org/en/project/ME-T1367

- **Support certification implementation in participating organizations** — including setup of internal control systems, documentation and preparation for external audits — enabling organizations to achieve and maintain the certification pathways identified under Output 3.1 and access the price premiums they generate.
- **Provide structured commercial accompaniment**, building on the market intelligence study, to participating organizations in identifying buyers across their target market tier, preparing quality and traceability documentation, facilitating commercial introductions and trade event participation, and supporting negotiations through to signed agreements.
- **Support each participating organization in developing a documented commercial strategy** covering: target market segment and rationale; buyer pipeline; pricing rationale and certification premium benchmarks; and a plan for sustaining commercial relationships and quality supply across variable harvest years.
- **Assess and facilitate access to price risk management instruments** such as forward pricing options and market floor mechanisms that protect producer income during climate-driven commodity price downturns, complementing the financial instruments being established under Component 2.

Output 3.3: Knowledge management and peer learning for climate-resilient coffee systems

This output ensures that learning generated across the project's three target regions and three components is systematized and shared in ways that accelerate adoption within the project and enable replication beyond it. Peer-to-peer learning among producer communities is a cost-effective channel for scaling both adaptation and commercialization knowledge. This will be formalized into a network that outlasts the project cycle. The output also generates the analytical instruments needed to improve the long-term enabling environment for climate-resilient coffee livelihoods: integrating agricultural climate resilience into Mexico's agricultural development finance taxonomy to unlock dedicated financial products; and establishing the feasibility of catastrophic insurance instruments for smallholder coffee producers, which would reduce income volatility in climate shock years and sustain the adaptation investment cycle that Components 1 and 2 initiate. Furthermore, this output will address barriers such as limited mainstreaming for climate risk into finance products and insufficient mechanisms to scale climate financing. Knowledge products will be designed for the literacy, connectivity and language contexts of target communities, including bilingual and low-connectivity formats, with materials for women, youth and indigenous producers. Indigenous and local knowledge on agroecological management and climate observation will be documented and incorporated with community consent.

Indicative activities:

- **Establish a peer-to-peer learning network** across the three target regions, to exchange experiences on climate adaptation, post-harvest management, market access and commercialization; using formats adapted to local connectivity and mobility conditions.
- **Collaborate with specialized organizations** including the Specialty Coffee Association of Mexico - AMCCE, and relevant trading platforms, to strenghten knowledge on quality positioning, certification, buyer relations and pricing in specialty and direct trade channels.
- **Develop accessible knowledge products** including practical guides on adaptation and market-entry; certification and traceability; case studies from women-led and indigenous producer organizations
- **Conduct a market diversification study** mapping alternative domestic and export opportunities for Mexican coffee, and related by-products reducing dependence on a single commercial channel.
- **Prepare a scale-up and replication package that** consolidates lessons from the project's

technical, organizational, financial, and knowledge management work.

- **Undertake analytical work to support the integration of agricultural climate resilience,** including for small-scale coffee producers, into Mexico's sustainable development finance taxonomy.
- **Develop, together with FIRA, a proposal for an agricultural resilience-based loan product** for the coffee sector.
- **Conduct a feasibility study** for a climate shock mitigation instrument for smallholder coffee producers, including options for insurance design and delivery.

B. Economic, social and environmental benefits

The project activities are fully consistent with the Environmental and Social Policy of the AF and aim to generate a range of environmental and socio-economic co-benefits. Table 7 summarises the project's key features.

Table 7. Economic, social and environmental benefits from the proposed interventions.

	Economic benefits	**Social benefits**	**Environmental benefits**
Component 1. Building resilience of smallholder coffee production systems and post-harvest processes	• Protects and stabilizes the productive asset base of smallholder coffee farming through renovation with climate-resilient and resistant varieties, reducing the risk of progressive yield decline and plantation loss. • Reduces avoidable production and post-harvest losses, helping producers preserve both volumes and quality in increasingly variable climatic conditions. • Improves coffee quality and consistency, which strengthens producers' ability to secure better prices and reduces income volatility linked to poor drying, spoilage, or climate-related quality deterioration. • Generates efficiency gains over time through improved soil fertility, on-farm biomass use, better water management, and lower dependence on external inputs	Strengthens the adaptive capacity of 9,000 coffee-producing households by providing practical, locally tested solutions to the climate risks affecting coffee systems and rural livelihoods. • Expands equitable access to climate-resilient technologies, advisory services, and applied learning opportunities for women, youth, and Indigenous producers, • Enhances local capacities for continuous adaptation through 200 upgraded or established FFSs, lead farmers, community nursery operators, and extension agents who can sustain knowledge transfer beyond the project period. • Improves livelihood security by making production systems more reliable and less vulnerable to climatic shocks.	Restores the ecological functionality of coffee landscapes • Improves soil structure, moisture retention, infiltration, and erosion control, thereby reducing land degradation and strengthening the capacity of farms to withstand droughts, intense rainfall, and temperature stress. • Restores 2,500 ha of degraded land and supports EbA practices across 2,500 ha, • Strengthens watershed regulation and reduces sedimentation and runoff through restoration of priority areas, generating resilience benefits beyond individual farms. • Enhances biodiversity, habitat connectivity, and ecological pest regulation
Component 2. Improving access to inclusive climate financing for small-scale	Expands access to affordable and more appropriate finance for climate-resilient coffee investments, helping smallholders overcome one of the main structural barriers to adaptation.	• Increases financial inclusion of vulnerable rural producers, particularly those currently excluded from formal financial services despite being highly exposed to climate risk. • Builds the managerial,	• Creates incentives for more sustainable land and resource management by making it financially feasible for producers to adopt practices that restore soil, improve water retention, and reduce

coffee producers	• Strengthens the financial performance and credit readiness of producer groups and cooperatives, increasing their capacity to mobilize resources and manage climate-related investment. • Reduces exclusion from financial services among producers with limited collateral, or low financial literacy, thereby widening the base of producers able to invest in resilience.	organizational, and administrative capacities of cooperatives and farmer groups so they can better support members in accessing and managing climate-related finance. • Improves women's and youth's ability to engage with financial services	degradation. • Reduces the pressure to maintain low-investment, low-resilience production systems that often contribute to declining soil fertility, poor land management, and long-term environmental degradation.
Component 3. Strengthening market access for smallholder coffee producers practicing climate-resilient production	Improves the commercial viability of climate-resilient coffee production by connecting producer organizations to differentiated markets that reward quality, consistency, traceability, and sustainability. • Strengthens the commercial and negotiation capacity of producer organizations, allowing them to engage buyers more strategically, reduce transaction asymmetries, and improve terms of market participation. • Reduces income volatility by diversifying market channels and improving preparedness for quality, traceability, and certification requirements. • Supports more stable cash flow and stronger business planning.	• Strengthens producer organizations as long-term economic and social institutions capable of aggregating supply, negotiating collectively, and supporting members' resilience. • Expands opportunities for women, youth, and Indigenous producers to participate in higher-value segments of the value chain. • Increases recognition of Indigenous identity, local knowledge, and territorial distinctiveness as assets in market positioning. • Builds networks for peer learning and knowledge exchange across regions, enabling more rapid uptake of successful models for adaptation. • Improves the attractiveness of coffee as a livelihood for younger generations by linking climate-resilient production to more viable and rewarding market opportunities.	

C. Cost-effectiveness of the proposed project/programme.

The selection of the proposed approach was based on a logical, comparative analysis of adaptation alternatives, evaluated against sustainability criteria. Table 8 compares the 'with' and 'without' scenarios for each project component and demonstrates the lack of feasible or cost effective alternative in the geographical and institutional context prioritized under this proposal.

Table 8. 'With'/'without' scenario comparison and identification of alternatives considered

Component	***Without Scenario***	***With Scenario***	***Alternatives considered***
Component 1. Building resilience of smallholder coffee production systems and post-harvest processes	Without the project, adaptation would be fragmented and reactive: (i) business-as-usual coffee orchards renovation without structural system changes (shade, soil, water, phytosanitary management); (ii) critical micro-catchments continue to degrade and their capacity to provide ecosystems services is reduced; (iii) small-scale or isolated "hard" water and post-harvest infrastructure with localized, short-term effects; and (iv) the promotion of improved practices and input packages do not achieve adoption at scale, with no production system redesign, generating recurring expenditures without reducing underlying vulnerability; (v) communities do not receive advance warning of pest outbreaks and extreme weather events, which results in loss of assets and resources, and potentially loss of life.	The project implements an integrated package of productive and ecosystem-based adaptation measures through farmer field schools: climate-informed renovation/rehabilitation of coffee agroforestry systems, soil and water management, resistant and resilient planting material, and preventive and early warning measures for pest outbreaks and extreme events. This reduces recurring losses, avoids repeated recovery costs, and generates medium- and long-term benefits (productivity, stability, ecosystem services). Communities are better able to plan specific coffee interventions and also receive sufficient advance warning of pest outbreaks and adverse weather conditions and extreme weather events and related hazards, enabling them to take preparatory action. Targeted investments to reverse degradation in critical watersheds allows the continued provision of key ecosystem services	The alternative that was considered would be to rely on government programs such as *Producción para el Bienestar* and *Cosechando Soberanía*, which have so far achieved limited outreach in the targeted areas which are characterized by a challenging orography, and remote communities, with so far limited uptake. For some interventions there are no viable alternatives, for instance in terms of improved local participatory mapping and planning and access to an Early Warning System, as these are essential to risk mapping and preparedness for pest outbreaks and extreme weather events. The alternative to providing capacity building to farmer groups through farmer field schools would be equivalent to using a non farmer-led and less consultative approach.
Component 2. Improving access to inclusive climate financing for small-scale coffee producers	In the absence of the project, less effective and efficient systems to access dedicated finance to renew coffee orchards would be available, including (i) generalized subsidies without linkage to adaptation results or to coffee production; (ii) short-term credit misaligned with perennial crops such as	The project combines improved access to finance targeted at small-scale coffee farmers, including their organizations and cooperatives, and includes risk-sharing schemes such as technical assistance to local financial institutions, and grants to individual coffee-farmers, as well as strengthening the capacity of	The alternative consists in relying on existing publicly financed initiatives administered by large second-tier financial institutions, which have been characterized by limited adherence of local financial institutions and a portfolio dominated by short-term financing for consumption and marketing, but without

	coffee; (iii) financial instruments without technical assistance that do not help address underlying physical risk; and (iv) unavailability of specific products suitable for small-scale coffee farmers.	producers organizations, the financial education of small-scale producers to better assess risks and attractiveness of accessing existing credit lines and guarantees, all this in order to facilitate investment in resilient practices and renewal of coffee orchards to catalyze private investment, and accelerate adoption.	the availability of an attractive product for longer-term investment in renewal of coffee orchards. This has led to relatively low levels of adoptions and limited availability of suitable financing products, and limited capacity to assess financial risks
Component 3. Strengthening market access for smallholder coffee producers practicing climate-resilient production	Without the project, market access actions would likely be partial with an increased risk of farmers switching to other crops than coffee or abandoning these rural areas entirely. The situation would likely be characterized by (i) weak producer organizations benefiting from isolated training without follow-up; (ii) certification or traceability efforts without genuine improvements in quality and organizational capacity and (iii) commercial linkages without securing sufficiently resilient volumes and quality, increasing the risk of non-compliance and volatility, thereby negatively affecting coffee producers income and their stability.	The project strengthens technical, organizational, and commercial capacities, and promotes traceability, access to differentiated markets, income diversification, and sustained accompaniment. This stabilizes incomes and enables long-term adoption and maintenance of adaptation practices and increased sustainability of investments provided under the other two components.	Alternatives considered involved not including a component on strengthening market access for smallholder coffee producers. However it was felt by the design team, as well as by national authorities that this component was essential to ensure a comprehensive approach to the whole value chain, and that it was critical to support improved market differentiation, traceability and quality premium for producers practicing climate-resilient production, that would ensure that proceeds would be reinvested in their coffee orchards and stabilize their income and livelihoods.

The proposed Adaptation Fund financing represents the necessary cost required to achieve the project's climate adaptation objectives under current and projected climate conditions in the prioritised coffee-producing territories of Mexico's Southeast. Selected interventions including renewal of coffee orchards with resistant and resilient varieties, the promotion and adoption of resilient production practices, the renovation of degraded hotspots in prioritized micro-catchments, coffee specific climate services (warning system, disaster risk reduction planning), climate-resilient infrastructure, and improved access to inclusive finance, and stronger market access, are specifically designed to address climate-induced risks that exceed baseline needs. Lower-cost or development-only alternatives would not adequately reduce exposure to climate-related hazards such as increased temperatures, recurrent droughts, and increasing pest and disease pressure, nor would they generate sustained adaptive capacity among vulnerable coffee-growing communities.

Table 9 presents a conservative estimate of the unit cost per direct beneficiary for each project output or adaptation measure. This figure is calculated by dividing the total estimated cost of each output by the projected number of direct beneficiaries. The number of direct beneficiaries was determined using (i) the number of farms in targeted municipalities; (ii) the number of households currently being

targeted under Escuelas de Campo, and (iii) consultations with key stakeholders and local authorities active in targeted areas. The unit cost reflects the total direct investment per person benefiting from that output.

Actual cost-effectiveness is higher than indicated because indirect beneficiaries—including other coffee producers in the same or similar municipalities in targeted States, and downstream communities benefiting from improved water flow, and coffee value chain stakeholders—are not included in the calculations. Including indirect beneficiaries would significantly lower unit costs.

Table 9 Preliminary estimate of cost per direct beneficiary of proposed outputs.

Output	Main activity	Estimated number of direct beneficiaries	Estimated Cost (USD)	Cost-effectiveness (USD/benef.)
Output 1.1	Improved varieties, multiplication, upper catchment regeneration	9,000 households (36,000 people)	7,000,000	777.78
Output 1.2	Agroclimatic tables, climate information	9,000 households (36,000 people)	511,521	56.83
Output 1.3	Post harvest and water storage infrastructure	2,500	2,500,000	1000
Output 1.4	Farmer field school facilitation and training	4,000	2,500,000	625
Output 2.1	Improved access to finance	3,000	4,640,000	1546.67
Output 2.2	Finance education	4,000	1,000,000	250
Output 3.1	Strengthen producer organization and traceability	1,500	800,000	533.33
Output 3.2	Market differentiation	1,500	1,200,000	800.00
Output 3.3	Knowledge Management	18,000	702,305	39.02

D. National or sub-national sustainable development strategies

The proposed climate adaptation project is strongly aligned with Mexico's overarching development priorities and climate adaptation frameworks (Table 10). It operationalizes national policies related to agriculture, coffee production systems and sustainable development while embedding climate resilience into local governance. At the highest level, the National Development Plan 2025–2030 (PND**)** places sustainable development at the centre of national policy and calls for climate action that strengthens the resilience of people, ecosystems, and productive systems, alongside more efficient water management and greater territorial equity. The PND also includes cross-cutting priorities on women's rights and the rights of Indigenous and Afro-Mexican peoples. These priorities are directly reflected in the project's focus on vulnerable smallholder producers, including women, youth, and Indigenous communities in coffee-growing territories.

In this context, the project contributes to the national development vision by promoting a model of rural transformation that combines climate resilience, productive inclusion, ecosystem sustainability, and social equity. By strengthening the adaptive capacity and livelihoods of smallholder coffee producers, the project supports a more resilient and inclusive rural economy in line with Mexico's sustainable development objectives.

Alignment with national climate policies

The project is fully consistent with Mexico's climate policy framework under the General Law on Climate Change (LGCC) and National Climate Change Strategy (ENCC). The ENCC (2024), is the medium- and long-term guiding instrument for national climate policy and explicitly frames adaptation

as a strategic pillar for reducing vulnerability and strengthening resilience in ecosystems, infrastructure, and productive systems. It promotes a systematic, decentralized, participatory, and integral approach to climate action, which is closely aligned with the project's design.

This alignment is reflected in the project's integrated approach, which combines climate-resilient coffee production systems, ecosystem-based adaptation, climate-informed advisory services, post-harvest resilience, inclusive finance, and market strengthening through territorial delivery platforms such as Farmer Field Schools and producer organizations.

The project is also fully aligned with the adaptation component of Mexico's NDC 3.0, submitted in November 2025. The NDC strengthens adaptation ambition through six pillars and emphasizes the need to reduce vulnerability in highly exposed territories, strengthen resilient production systems and food security, conserve biodiversity and ecosystem services, improve water security, protect strategic infrastructure, and address the social consequences of climate impacts. The project operationalizes these priorities by promoting climate-resilient coffee systems through renovation with resilient varieties, agroforestry and agroecological practices, soil and water conservation, rainwater harvesting, climate-informed advisory services, post-harvest technologies, and stronger financial and market access. It also reflects the NDC's emphasis on inclusive, rights-based adaptation by prioritizing populations facing multidimensional vulnerability, particularly Indigenous Peoples, women, and rural youth.

Compliance with environmental and agricultural frameworks

From the sectoral perspective, the project aligns directly with the Agriculture and Rural Development Sector Programme 2025–2030, which seeks to strengthen food sovereignty and self-sufficiency, improve the welfare of small- and medium-scale producers, increase the sustainability and resilience of agrifood systems to climate change, and improve water sustainability in the sector. These priorities are reflected across the project's three components: Component 1 strengthens climate-resilient production and post-harvest systems; Component 2 expands inclusive access to finance for adaptation investments; and Component 3 supports organization, traceability, and market access so that adaptation translates into more stable and remunerative livelihoods.

The project is also aligned with the Environment and Natural Resources Sector Programme 2025–2030 (PROMARNAT) and with Mexico's biodiversity agenda under National Biodiversity Strategy and Action Plan of Mexico 2016–2030 (ENBioMex 2016–2030). These frameworks stress the importance of ecosystem protection and restoration, sustainable use of natural resources, biodiversity conservation, and the strengthening of ecosystem services as foundations for resilience and sustainable development. This is directly relevant to the project's ecosystem-based approach, which combines coffee system renovation with agroforestry, restoration of degraded slopes and riparian areas, soil and water conservation, and improved biological regulation functions within coffee landscapes.

In addition, the project aligns with priority government programmes that support small producers and offers an important operational pathway for implementation and scaling. *Producción para el Bienestar (Prouction for Wellbeing)* supports small- and medium-scale producers, including coffee producers, through direct economic support and technical-organizational accompaniment to promote agroecological and sustainable practices. *Cosechando Soberanía* (Harvesting Sovereignty) complements this by providing financing, technical accompaniment, and subsidized insurance and price coverage mechanisms for strategic crops, including coffee, while *Alimentación para el Bienestar* (Food for Wellbeing) supports fair commercialization and value addition for coffee produced by smallholders. The project builds on and strengthens these programmes by linking climate adaptation investments with technical support, financial inclusion, post-harvest improvement, and better market integration for vulnerable coffee producers.

Table10. Overview of national policies and strategies and how the project aligns.

National policy	Relevance to the project	How the project aligns
National Development Plan 2025–2030[35]	Provides the overarching development framework for resilient and inclusive rural development.	The project supports vulnerable coffee producers through climate adaptation, ecosystem restoration, better water management, and inclusive targeting of women, youth, and Indigenous communities.
General Law on Climate Change and National Climate Change Strategy[36]	Establishes the national basis for adaptation planning and implementation.	The project operationalizes this framework through climate-resilient production systems, ecosystem-based adaptation, climate-informed advisory services, and local institutional strengthening.
Nationally Determined Contribution 3.0[37]	The most relevant current national commitment for adaptation ambition with focus on reducing vulnerability, resilient food systems, biodiversity and ecosystem services, water security, and social dimensions of climate risk.	The project advances these pillars through resilient varieties, agroforestry, water harvesting, post-harvest resilience, financial inclusion, and stronger livelihoods for climate-vulnerable coffee producers.
Agriculture and Rural Development Sector Programme 2025–2030[38]	Highly relevant sector framework for smallholder coffee systems, promoting food sovereignty, welfare of small producers, resilience of agrifood systems, and water sustainability.	The project strengthens climate-resilient coffee production, improves producer capacity and organization, expands access to finance, and supports more resilient agrifood livelihoods.
Environment and Natural Resources Sector Programme 2025–2030[39]	Encourages ecosystem restoration, biodiversity, climate resilience, sustainable resource and water management.	The project restores ecosystem functions in coffee landscapes through agroforestry, soil conservation, riparian restoration, and improved watershed regulation.
National Biodiversity Strategy and Action Plan of Mexico 2016–2030[40]	Relevant to biodiversity-friendly coffee landscapes and ecosystem services.	The project promotes agroforestry and restoration in ways that conserve biodiversity, strengthen ecological functions, and support culturally appropriate engagement of Indigenous producers.

E. Compliance with relevant national technical standards

The project is fully aligned with Mexico's national technical standards and regulatory frameworks governing agriculture, environmental management, climate adaptation, biodiversity, forestry, water use, and rural development. All activities will comply with federal and state-level requirements as well as technical norms (Normas Oficiales Mexicanas – NOMs) relevant to sustainable agriculture, agroforestry, nursery management, post-harvest processing, soil and water conservation, and environmental protection.

Agricultural Production and Phytosanitary Standards: All actions involving seedling production, genetic material, pest and disease management, and field renovation will comply with the technical norms and protocols established by the Ministry of Agriculture and Rural Development (SADER), including NOMs related to plant propagation material, phytosanitary control, agrochemical handling, and nursery certification. Climate-resilient planting material distributed through the project will follow INIFAP protocols for varietal testing, seedling certification, sanitary management, and quality assurance. Soil conservation and agroforestry practices introduced by the project conform to national guidelines for sustainable agriculture and land management under SADER and CONAFOR.

[35] Plan Nacional de Desarrollo 2025–2030
[36] Ley General de Cambio Climático (LGCC) and Estrategia Nacional de Cambio Climático (ENCC, updated 2024)
[37] Contribución Determinada a Nivel Nacional 3.0 (NDC 3.0, 2025)
[38] Programa Sectorial de Agricultura y Desarrollo Rural 2025–2030
[39] Programa Sectorial de Medio Ambiente y Recursos Naturales 2025–2030 (PROMARNAT)
[40] Estrategia Nacional sobre Biodiversidad de México y Plan de Acción 2016–2030 (ENBioMex)

Environmental Assessment and Water Resource Standards: All interventions will comply with SEMARNAT requirements regarding environmental impacts, landscape modification, vegetation management, and soil conservation. Where applicable, activities will follow NOM-015 (fire management), NOM-052 (waste), NOM-059 (biodiversity and species protection), and applicable norms for water use, reforestation, erosion control, and watershed restoration. Any water-related structures (micro-catchments, infiltration trenches, harvesting systems) will comply with guidelines from CONAGUA and state-level water authorities. No activity will trigger requirements for Environmental Impact Assessment beyond allowable thresholds; if required, SEMARNAT procedures will be followed prior to implementation.

Agroforestry and Forestry-related Standards: Agroforestry renovation and shade-tree establishment will comply with CONAFOR and SEMARNAT technical standards for forest species selection, planting density, restoration practices, and management of forest resources on agricultural land. Activities will follow applicable guidelines for the sustainable management of non-timber forest products, vegetation enrichment, and conservation of tree cover in alignment with NOM-061 and related standards for forest restoration.

F. Duplication with other funding sources

Consultations undertaken during project preparation and review of ongoing programms, confirmed that no other initiative is currently delivering the same integrated package of activities in the selected project areas of Chiapas, Guerrero, and Oaxaca, particularly with a combined focus on climate-resilient coffee production, EbA, producer-level resilience investments, and inclusive access to climate-relevant finance. The project has therefore been designed to address a clear geographic and thematic gap while building complementarity with relevant initiatives active in southern Mexico.

The proposed project does not duplicate ongoing or planned interventions financed by bilateral or multilateral partners in the targeted municipalities. Existing initiatives in Mexico’s coffee sector and broader climate adaptation agenda are generally concentrated in different territories, focused on enabling policy and planning conditions, or limited to coffee-only systems rather than an integrated coffee adaptation approach. The project has nonetheless considered both overlap risks and potential synergies with major ongoing and recently approved initiatives (Table 11).

These include the GCF-funded AROMA programme, which is being developed as a coffee resilience initiative in Chiapas, Oaxaca, and Puebla, but does not consider the same municipal selection; the GCF-funded BALSAS project [FP236], which promotes broader basin-scale climate resilience, ecosystem conservation, and sustainable livelihoods, but is not designed as a coffee- -specific adaptation intervention; and the SAbERES programme, which supports land-use planning and financial innovation as enabling conditions for resilience.

Other relevant initiatives, such as the GEF/World Bank-funded Mexico Sustainable Productive Landscapes Project (Territorios Productivos Sostenibles, TPS), IICA/OPSAA climate-smart coffee initiative, Rainforest Alliance support in Chiapas, and TEEB AgriFood analytical work in coffee landscapes, provide complementary technical, market, and knowledge inputs, but do not finance the same integrated farm-, community-, and value-chain-level adaptation package proposed in this AF project.

In summary, the proposed intervention offers additional value and avoids duplication by addressing a gap not addressed by existing programmes. Its distinct value lies in combining ecosystem-based adaptation, climate-resilient production measures, value-chain support, and inclusive financial solutions for vulnerable smallholders in high-risk coffee-producing landscapes.

Table 11. Summary of ongoing and pipeline projects.

Project name	Description	Potential synergy
BALSAS – Basin Approach for Livelihood Sustainability through Adaptation Strategies (FP236)	Aims to increase the climate resilience of vulnerable rural communities in the Balsas Basin through climate-resilient production, sustainable land use, ecosystem conservation, and stronger local institutions and value chains, with a strong emphasis on inclusion of women, youth, and Indigenous Peoples.	The AF project can complement BALSAS by translating broader territorial resilience objectives into targeted adaptation action for coffee systems.
AROMA – Alternative Response Options for Mitigation & Adaptation of Coffee Farms	A multi-country coffee programme (GCF) to strengthen the resilience of coffee-producing landscapes and communities while reducing maladaptive expansion of coffee production and associated emissions; Mexico is one of the participating countries.	The AF project can build direct complementarities by applying similar approaches to climate-resilient coffee production, landscape adaptation, and producer support, while avoiding duplication through intervention in different municipalities. The project can also generate lessons on adaptation finance, indigenous community engagement, and resilient production systems that can be exchanged with AROMA to strengthen replication and scale.
SAbERES – Land-use Planning and Financial Innovation to Increase Mexico's Resilience to Climate Change	supports small-scale producers in Mexico to adapt to climate change through ecosystem-based adaptation, restoration and conservation of rural landscapes, land-use planning, technical support, and innovative financial instruments that strengthen resilience, food security, and local incomes.	The AF project can use the territorial planning tools, EbA approaches, and financial innovation mechanisms developed under SAbERES to strengthen implementation in coffee landscapes. While SAbERES focuses on enabling conditions, public policy, and financial architecture, the AF project can operationalize these at farm and community level through direct adaptation investments and value-chain support.

G. Learning and knowledge management

Knowledge management (KM), learning, and communication are cross-cutting elements of the project, strengthening adaptive capacity, supporting evidence-based decision-making, and enabling the replication and scaling of climate-resilient practices in Mexico's coffee sector. Because climate risks and adaptation responses are context-specific and evolving, KM is needed to capture, validate, share, and apply implementation lessons.

This is formalised under Output 3.3, which focuses on KM and peer learning for climate-resilient coffee systems. It will consolidate and share knowledge generated across the project to accelerate adoption during implementation and support replication beyond the project cycle, while also informing public programmes, financial actors, and future investment decisions. The project will adopt an inclusive, gender-responsive, and culturally appropriate KM approach that recognizes Indigenous and local knowledge as a critical source of adaptation knowledge alongside technical and scientific evidence. Indigenous and local knowledge will be documented and incorporated into learning and adaptation planning processes, with community consent and in culturally appropriate ways.

1. Generation and systematization of knowledge

The project will generate knowledge by implementing climate-resilient varieties, agroecological practices, post-harvest innovations, financial instruments, and market-access mechanisms. This will be documented through field evidence, implementation records, case studies, technical briefs, and lessons learned. Universities, research centres such as INIFAP, and technical teams will support the validation and systematization of results, ensuring technical rigor and relevance across different agroecological contexts. Participatory processes will also capture Indigenous and local knowledge on climate observation, seed selection, shade and soil management, water use, pest management, post-harvest practices, and livelihood strategies.

2. Knowledge sharing and learning platforms

Farmer Field Schools will serve as the primary local knowledge hubs, enabling experiential learning, farmer-to-farmer exchange, and participatory monitoring. Output 3.3 will establish a structured peer-to-peer learning network across the target regions to exchange experience on climate adaptation, post-harvest quality, market access, and commercialization models. The project will also support learning workshops and technical dialogues with public institutions, financial actors, and market stakeholders. Particular attention will be given to ensuring the meaningful participation of women, youth, and Indigenous Peoples through facilitation methods, schedules, languages, and formats adapted to their needs and constraints.

3. Communication and uptake of knowledge

KM outputs will be translated into tailored communication products for producers, policymakers, financial institutions, and buyers. These may include policy briefs, practical guides, digital learning modules, short videos, and other accessible dissemination products to promote adoption, replication, and scaling. Knowledge products under Output 3.3 will be developed in accessible, visual, and, where relevant, bilingual formats. They will also highlight local and Indigenous practices, and the leadership of women and community organizations, where relevant.

4. Learning, feedback, and adaptive management

KM will be closely linked to the project's monitoring and evaluation system to enable continuous learning and adaptive management. Feedback from producers, extension agents, financial partners, and market actors will be systematically captured and used to refine technical approaches, financial instruments, and market strategies during implementation. By embedding KM within existing government programmes and national research institutions, the project will help ensure that knowledge remains accessible beyond the project's lifetime and supports a stronger enabling environment for climate-resilient coffee livelihoods.

H. Consultative process

Between January and February 2026, an extensive, participatory consultation process was conducted in the three target states—Chiapas, Oaxaca, and Guerrero—to inform the project's design. The process included five in-person workshops in Huixtla (Chiapas), San Agustín Loxicha and Miahuatlán (Oaxaca), and Paraje Montero–Malinaltepec (Guerrero), as well as a national-level technical consultation in Mexico City. Across all locations, consultations ensured the presence of: smallholder coffee producers; women producers and women's groups; youth; Indigenous community members; extension agents; Farmer Field Schools; producer organizations; and municipal authorities. Please see Table 12 for detailed description.

Special measures were taken to ensure full participation of Indigenous Peoples, who constituted the majority in Oaxaca and Guerrero (Zapoteco, Tlapaneco, Mixteco-speaking communities, among others). Measures included facilitation in local languages, culturally appropriate methodologies, and scheduling aligned with agricultural and community rhythms. Women and youth participated through dedicated working groups, ensuring that gender-specific and generational barriers were captured explicitly—such as workload inequalities, limited access to financing, lack of equipment, lack of recognition of women as producers, migration pressures on youth, and limited access to markets.

All workshops used structured, participatory tools (problem trees, barrier–solution matrix, prioritization of activities) to identify climate risks, productive constraints, institutional gaps, and adaptation needs. Across states, participants consistently highlighted climate variability, drought, new pest pressures, degraded soils, lack of resilient varieties, insufficient technical assistance, limited access to credit, and market intermediation as core barriers to resilience. Women's groups emphasized needs for post-harvest infrastructure, safer working conditions, certification support, financial education, access to equipment (dryers, measurement tools), and reduction of gender-based barriers. Youth identified low incentives to remain in coffee farming, lack of training, and limited market opportunities. Mixed groups emphasized soil conservation, water harvesting, agroforestry, and the need for transparent and consistent technical support.

Inputs from all territories were systematized through the three Excel files (Chiapas, Oaxaca, Guerrero) and the narrative synthesis from the January 2026 meeting. These inputs directly shaped the design of Components 1–3, including: climate-resilient renovation packages, water harvesting and soil conservation actions, strengthened FFS with bilingual/local facilitators, gender-responsive financing and commercial training, and improved producer-led market access. The consultation process will continue during full project preparation, ensuring iterative participation, culturally appropriate engagement, and continued application of the AF Environmental and Social Policy and Gender Policy.



Table 12. Overview of Consultations Conducted

Date	Location	Participants (Total)	% Women	% Indigenous	Key Stakeholders Present	Main Issues Identified
13 Jan 2026	SADER, Mexico City	19 participants (mixed states)	~25% (based on names)	Mixed	Producer cooperatives from Puebla, Veracruz, Chiapas, Oaxaca; INIFAP; SADER technicians	Rising pests and diseases; certification challenges; lack of nurseries; credit limitations; need for improved seed quality; climate variability impacts.
22 Jan 2026	Miahuatlán de Porfirio Díaz, Oaxaca	37 participants (12 men, 25 women)	68% women	68% Indigenous (Zapoteco)	Women's groups, youth, producer organizations, Sikanda AC, local ECAs	Soil degradation; drought; plagues; need for nurseries; market access; gender barriers; lack of financial education; need for collective organization.
22 Jan 2026	San Agustín Loxicha, Oaxaca	34 participants listed across 5 pages	~42% women (based on list)	>90% Indigenous (Zapoteco) (selfidentification recorded)	Zapotec coffee producers; women producers; youth; community leaders; municipal representatives	Climate variability; pests; soil fertility; lack of equipment (dryers, humidity meters); need for seed certification; need for women's market access; barriers linked to machismo; inadequate access to health and training.
22 Jan 2026	Huixtla, Chiapas	68 participants (55 men, 13 women)	19% women	~10% Indigenous	ECAs (multiple communities); UNACH; SENASICA; Heifer International; producer groups	Drought and lack of irrigation; soil degradation; pests (roya, broca); post-harvest losses; limited access to credit; weak organizational capacity; need for women's recognition as producers; market intermediation problems.
22 Jan 2026	Paraje Montero, Malinaltepec, Guerrero	117 participants (81 men, 36 women)	31% women	>95% Indigenous (Tlapaneco, Mixteco, others)	Community authorities; producer organizations; women's groups; youth; ECAs	Climate impacts on coffee; lack of nurseries; need for shadegrown systems; high costs of inputs; plagues; lack of market access; lack of technical support; gender barriers; communication barriers (poor phone signal).

I. Justification for funding requested

Climate change is already reducing the viability of coffee-based livelihoods in Mexico through rising temperatures, irregular rainfall, more frequent droughts, soil degradation, and increasing pest and disease pressure. Without the AF grant, no resources exist to implement the climate-specific measures required to protect vulnerable producers — particularly Indigenous communities, women, and smallholders in marginal areas. Table 13 summarizes the climate risks the project addresses and the adaptation benefits achievable with the AF grant alone (i.e., *no additional external financing*). These numbers are indicative at Concept Note stage and will be refined during full proposal development.

Table 13. Climate Challenges and Adaptation Results Achieved With the AF Grant (Full Cost of Adaptation Reasoning)

Climate risk identified	**How the AF-Financed Project Enables Adaptation (with NO additional external funding)**
1. Rising temperatures and heat stress reducing coffee suitability, yield, and bean quality	• Up to 3,000 ha renovated with heat and droughttolerant coffee varieties. • 200 climateresilient nurseries upgraded to produce improved genetic material. (Output 1.1 and 2.1) • Approx. 9,000 households (36,000 people) will directly benefit from climateadapted planting material.(Output 1.1) • 40% women, 30% youth, 60% Indigenous participants (indicative).
2. Increasing drought frequency and moisture deficit in coffee plots	• Installation of 2,500 ha of soil and water conservation measures (mulching, terraces, infiltration trenches). (Output 1.1) • Deployment of agroforestry systems on renovated plots to increase shade, reduce evapotranspiration, and buffer extreme heat. • 10 million climateresilient seedlings produced per year for droughtaffected regions. (Output 1.1 and 2.1)
3. Erratic rainfall, extreme rainfall events, erosion, and land degradation	• Restoration of 2,500 ha priority micro-watersheds in Indigenous territories. (Output 1.1) • Stabilization of slopes and degraded areas through erosion control structures. • Community-based water harvesting benefiting directly approx. 2,500 households in upper and lower catchment communities. (Output 1.3)
4. Increasing pest and disease outbreaks (e.g., roya, broca) driven by warmer nights and humidity shifts	• Creation of coffee-specific climate services and early-warning systems benefiting directly 9, 000 producers and reaching 11,000 producers indirectly (overall 40% of the total number of producers in the project target areas). (Output 1.2 and 1.4) • Deployment of real-time disease alerts via mobile networks and ECAs. • 9,000 producers trained on climate-informed Integrated Pest Management (IPM). (Output 1.2 and 1.4)
5. Loss of coffee quality due to heat/humidity spikes and unpredictable drying conditions	• Installation of 200 climate-resilient post-harvest units (solar dryers, raised beds, controlled fermentation). (Output 1.3 and 1.4) • 100 organizations adopt climate-adaptive quality protocols. (Output 3.1) • Reduction in climate-related post-harvest losses by an estimated 25–40% (indicative). (Output 1.3)
6. Increased income volatility due to climate-driven production losses and unstable markets	• Market diversification pathways enabling 5000 households to directly access stable, climate-resilient buyers. (Output 3.2) • Creation of 200 women's and Indigenous origin batches for premium markets. • Strengthened traceability and quality systems to maintain contracts despite climate-induced variability.
7. Limited capacity of Indigenous Peoples, women and youth to invest in climate adaptation	• 4,000 producers will directly benefit from training in financial literacy and climate risk management. (Output 2.2) • 150 producer organizations strengthened (administration, credit management, climate planning) (Output 2.2) • Targeted adaptation support to 50 Indigenous communities, aligned with cultural

	protocols. (Throughout all Outputs) • De-risking grants lower adoption costs for the poorest households. (Output 2.1)
8. Climate shocks (droughts, storms) causing cashflow collapse and abandonment of coffee plots	Flexible climate-aligned credit products offer from local financial institutions, aiming to prevent distress sales and decapitalization (Output 2.1)

J. Sustainability of the project/programme outcomes

The sustainability of the project's outcomes is anchored in its institutional integration, scaling-up inclusive financial instruments, and capacity-building approach, which together ensure that adaptation benefits extend well beyond the project's implementation period. By being implemented in close cooperation with priority programs of the Ministry of Agriculture and Rural Development (SADER), the project embeds its interventions within permanent public policy instruments with national coverage, stable budgets, and established operational structures, creating clear pathways for scaling up and long-term continuity.

First, sustainability is reinforced through institutionalization and scaling. With the integration of a strong adaptation theory of change into the PpB program, the project ensures that climate-resilient practices—such as the renewal of coffee plantations with improved, climate-adapted genetic material and agroecological management—are mainstreamed into public policy that already reaches hundreds of thousands of producers. The use of farmer field schools strengthens local technical capacities and peer-to-peer knowledge transfer, enabling producers to continue applying and disseminating resilient practices after project completion, while allowing future cohorts of beneficiaries to be incorporated at marginal additional cost.

Second, the project promotes financial sustainability by strengthening and innovating the financial instruments of *Cosechando Soberanía* (Harvesting Sovereignty). By integrating improved access to climate-sensitive finance, and tiered risk-mitigation mechanisms, the project reduces producers' vulnerability to climate impacts and improves their long-term bankability. These instruments are designed to persist as part of the sector's financial architecture, ensuring continued access to financing, facilitating reinvestment in resilient production systems, and preventing the erosion of adaptation gains due to extreme climate events. In parallel, close collaboration with FIRA inserting adaptation into its sustainable finance taxonomy, and developing a resilience-specific product, and assessing the feasibility of a coffee-specific catastrophic insurance product will further ensure the potential of scaling up climate adaptation finance, as well as risk management.

Third, sustainability is ensured through market integration and value-chain strengthening, particularly via *Alimentación para el Bienestar* (Food for Well-being). By providing improved market access to coffee producers and strengthening quality and traceability standards, the project secures stable commercialization channels and price incentives for climate-resilient coffee. Investments in shared logistics, collective traceability, and certification at national and international levels increase producers' incomes and create durable economic incentives to maintain adapted practices over time.

Finally, the project's outcomes are sustained through policy coherence, learning, and monitoring. Alignment with national climate policy instruments (ENCC, PECC, NDC 3.0) and integration with climate MRV systems enable the documentation of results, support evidence-based adjustments, and justify continued public investment. By framing adaptation as a driver of productivity, inclusion, and competitiveness, and by embedding it within flagship agricultural programs, the project creates a self-reinforcing cycle in which resilient practices are economically viable, institutionally supported, and socially owned—ensuring the durability and scalability of its impacts in Mexico's coffee-producing regions.

K. Environmental and social impacts and risks identified

A preliminary environmental and social screening of the project has been carried out against the Adaptation Fund Environmental and Social Policy (ESP) and its 15 principles, using IFAD's SECAP screening procedures. The project will support small-scale, community-led investments in climate-resilient coffee agroforestry, ecosystem restoration, post-harvest improvements and producer-level capacity building, together with institutional strengthening in Chiapas, Oaxaca and Guerrero. These interventions may generate localized, predictable and mostly reversible environmental and social impacts, all of which can be effectively mitigated through standard good practice, robust screening of community-level investments, and targeted management measures.

Based on the screening results, the project is expected to fall under Category B (Moderate Risk) under the Adaptation Fund ESP. No activities with potentially significant, widespread or irreversible adverse impacts that would qualify as Category A are envisaged. All community-level or investments to be financed under the project are expected to fall within Categories B or C, consistent with the project's documented procedures for environmental and social screening.

The table below summarizes which AF ESP principles are triggered and where further assessment and management actions will be required during full proposal development and implementation.

Table 14. Check list of potential environmental and social impacts and risks

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		There is a low risk that some activities—such as small-scale infrastructure, restoration works, or agro-input management in Indigenous territories—could unintentionally trigger national permits, local approvals, or FPIC requirements if not properly screened. The project addresses this by applying site-specific regulatory checks, ensuring all activities comply with Mexican environmental, land-use, labour, and Indigenous rights legislation, and implementing culturally appropriate FPIC and community consultation processes; all project actions operate under IFAD safeguards and the ESMP to guarantee full legal compliance.
Access and Equity		There is a moderate risk that certain groups—especially women, youth, Indigenous Peoples, and poorer smallholders—may face barriers to accessing training, inputs, financing, or market opportunities due to existing social inequalities, language differences, and uneven community power dynamics. The project addresses this by using inclusive and bilingual Farmer Field Schools, transparent beneficiary selection, FPIC and culturally appropriate engagement with Indigenous authorities, and targeted support for women and youth across all components, ensuring equitable access to resources, information, and benefits.
Marginalized and Vulnerable Groups		There is a moderate to high risk that marginalized groups—especially Indigenous Peoples, women, youth, Afro-Mexican communities, and households in extreme poverty—could be unintentionally excluded from project benefits due to structural inequalities, language barriers, or community power dynamics. The project addresses this risk by applying culturally appropriate FPIC processes, using bilingual and inclusive Farmer Field Schools, tailoring outreach to women and youth, strengthening producer organizations through Output 2.2 to reduce internal power imbalances, and ensuring that all activities under all components deliberately target and monitor the participation of the most vulnerable groups.
Human Rights		There is a low risk that project activities could inadvertently affect human rights if vulnerable groups—particularly Indigenous Peoples, women, youth, or migrant workers—are not able to participate safely or if consultation processes fail to reflect

		community decision-making structures. The project directly mitigates this by applying FPIC in Indigenous territories, using culturally appropriate and bilingual engagement, ensuring transparent and inclusive participation in all components, enforcing strict prohibitions against discrimination, forced labour, child labour, or GBV, and operating under IFAD safeguards and the ESMP to ensure full alignment with national and international human rights standards.
Gender Equality and Women's Empowerment		There is a low risk that gender inequalities—such as women's limited access to land, credit, training, time, mobility, and decision-making spaces in Indigenous and rural communities—could reduce women's participation and benefits from the project. The project directly addresses this by mainstreaming gender inclusion across all components: ensuring at least 45–50% women's participation in FFS, adapting training schedules and materials to women's needs, prioritizing women-led nurseries and producer groups, incorporating gender-responsive financial education under Output 2.2, and strengthening women's roles in commercialization and traceability systems under Component 3. These measures collectively promote equitable access, leadership opportunities, and meaningful empowerment for women in targeted territories.
Core Labour Rights		There is a low risk that some labour rights—such as freedom of association, fair working conditions, or the prohibition of child labour and forced labour—could be unintentionally compromised, especially during seasonal harvest peaks or when producer organizations hire temporary workers. The project addresses these risks by enforcing IFAD labour-standards requirements, prohibiting child and forced labour, integrating safe and fair labour practices into Farmer Field Schools, strengthening cooperatives' governance and labour compliance under Output 2.2, and requiring that any project-supported activity—such as nursery work, post-harvest processing, or renovation—adheres to national labour laws and ILO core conventions, ensuring safe, voluntary, and dignified working conditions for all participants.
Indigenous Peoples		There is a moderate risk that project activities implemented in Indigenous territories could unintentionally overlook customary governance systems, create inequities in participation, or affect culturally significant practices if engagement is not culturally appropriate. The project addresses this by applying FPIC where required, conducting all planning and implementation through Indigenous authorities, using bilingual and culturally adapted Farmer Field Schools, ensuring voluntary participation in restoration and renovation activities, and embedding Indigenous knowledge in all components, thereby safeguarding rights, ensuring inclusive governance, and strengthening Indigenous-led climate resilience.
Involuntary Resettlement		There is no foreseeable risk of involuntary resettlement because the project does not require land acquisition, relocation, or restrictions on access to land or resources. All activities—such as renovation of coffee plots, community nurseries, restoration works, and FFS—take place on existing, voluntarily participating smallholder or communal lands. To ensure this remains the case, the project applies FPIC in Indigenous territories, uses voluntary enrolment for all plot-level interventions, screens all micro-sites through the ESMP to avoid any activity that could create displacement pressures, and ensures that no project action alters land tenure or customary access rights, thereby fully preventing any form of physical displacement.
Protection of Natural Habitats		There is a low risk that small-scale works—such as restoration activities, nursery upgrades, water harvesting structures, or post-harvest improvements—could inadvertently affect natural habitats if poorly sited, especially in areas near riparian zones, secondary forests, or ecologically sensitive slopes. The project deliberately prevents these impacts by conducting site-specific screening under the ESMP, avoiding any intervention in primary forests or conservation areas, using only degraded or already-managed agricultural lands for restoration and renovation activities, and promoting agroforestry and riparian restoration under Component 1, which strengthens biodiversity, soil stability, and ecosystem functions rather than disturbing natural habitats.

Conservation of Biological Diversity		There is a low risk that project activities—such as small-scale infrastructure or on-farm renovation—could inadvertently affect local biodiversity if not properly sited or if non-native species were introduced. The project mitigates this risk by strictly avoiding interventions in primary forests, using only native shade and restoration species validated by INIFAP, restoring riparian and degraded areas under Component 1 to enhance habitat connectivity, and promoting diversified agroforestry systems that increase tree cover, soil health, pollinator habitat, and overall ecosystem function; all micro-sites are screened through the ESMP to ensure activities contribute positively to biodiversity conservation.
Climate Change		There is a low risk that project activities could unintentionally contribute to greenhouse gas emissions or maladaptation if practices such as renovation, post-harvest improvements, or water management are not climate-informed. The project deliberately mitigates this risk by promoting climate-resilient coffee agroforestry systems, restoration of degraded and riparian areas, soil and water conservation practices, and low-energy post-harvest technologies under Component 1; strengthening climate-informed decision-making through coffee-specific agroclimatic advisories under Output 1.2; and ensuring that all activities are screened for maladaptation through the ESMP, thereby aligning the project with low-emission, climate-resilient pathways.
Pollution Prevention and Resource Efficiency		There is a low risk of localized pollution or inefficient resource use—such as improper disposal of organic coffee waste, small amounts of wastewater from wet processing, or limited use of agro-inputs—if these activities are not well managed. The project addresses this by promoting low-input agroecological practices, composting and bio-input production, safe wastewater handling in post-harvest pilots, efficient water-harvesting structures, and the exclusive use of nationally approved, low-toxicity inputs under IPM. All micro-activities are screened through the ESMP, and Farmer Field Schools include training on safe waste management and resource-efficient practices, ensuring minimal pollution and improved resource efficiency.
Public Health		There is a low risk of public health impacts if small-scale water harvesting structures create stagnant water, if wet-processing generates wastewater that is not properly managed, or if increased humidity during post-harvest handling raises fungal or contamination risks. The project addresses these risks by ensuring proper drainage and siting of all water structures, incorporating safe wastewater management in post-harvest pilots, providing hygiene and health-related training through Farmer Field Schools, avoiding activities that could increase vector breeding, and screening all micro-sites through the ESMP to ensure that no intervention heightens exposure to water-borne, vector-borne, or sanitation-related health risks.
Physical and Cultural Heritage		There is a low risk that small-scale activities—such as restoration works, nursery upgrades, or demonstration sites—could inadvertently affect areas of cultural significance or intangible heritage within Indigenous territories if locations are not carefully screened. The project addresses this by conducting site-specific ESMP screening, applying FPIC and culturally appropriate consultations with Indigenous authorities, avoiding any intervention near sacred sites or culturally important landscapes, and incorporating Indigenous knowledge and practices into FFS and restoration activities, ensuring that all actions respect and reinforce, rather than disrupt, physical and cultural heritage.
Lands and Soil Conservation		There is a low risk that small-scale works—such as on-farm renovation, water harvesting features, or nursery improvements—could generate localized soil disturbance, erosion, or slope instability if not properly designed, especially in steep coffee landscapes typical of the project areas. The project mitigates this by promoting agroforestry, soil cover, contour planting, infiltration trenches, mulching, and other ecosystem-based soil conservation practices under Component 1; restoring degraded slopes and riparian areas; screening all micro-sites through the ESMP to avoid erosion-prone zones; and providing FFS training on sustainable soil and land management, ensuring that all activities strengthen rather than degrade soil health and land stability.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Demonstrate how the project aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Objective 1. Strengthen the climate resilience of smallholder coffee production systems in priority landscapes through the adoption of climate-resilient varieties on at least 3,000 ha, ecosystem-based adaptation practices, and climate-informed farm management on at least 2,500 ha, restoration of 2,500 ha degrades land and by at least 9,000 producers	- # of smallholder coffee producers adopting climate-resilient production practices promoted by the project, disaggregated by sex, age, and Indigenous status. - # Ha of coffee production systems under climate-resilient management, including climate-resilient varieties, agroforestry/EbA practices, and climate-informed farm management. - % of supported producers reporting improved capacity to anticipate and manage climate-related risks affecting coffee production. - % of supported producers applying climate-informed advisory information to production and post-harvest decisions.	Outcome 1: Reduced exposure to climate-related hazards and threats Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses Outcome 3: Strenghtened awareness and ownership of adaptation and climate risk reduction processes Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis. 2.1. Capacity of staff to respond to and mitigate impacts of climate-related events from targeted institutions increased. 3.2. Percentage of targeted population applying appropriate adaptation responses 5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	
Objective 2. Enhance the adaptive capacity and livelihood resilience of vulnerable smallholder	- # of smallholder coffee producers accessing climate-relevant financial services or products through project-supported mechanisms,	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	

coffee producers by improving inclusive access to climate finance, strengthening at least 100 producer organizations, and expanding market access for coffee produced under climate-resilient practices.	disaggregated by sex, age, and Indigenous status. - # of producer organizations with strengthened organizational and commercial capacity to access differentiated markets for coffee produced under climate-resilient practices. - Volume and/or value of coffee marketed through project-supported differentiated market channels linked to climate-resilient production. - % of supported producers reporting improved livelihood resilience, including greater ability to absorb climate-related shocks and reinvest in resilient production.	targeted areas		
Total outcome level grant amount				25,000,000
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1. Vulnerable smallholder coffee producers, including women, youth, and Indigenous groups, adopt climate-resilient practices that strengthen coffee production systems, landscapes, and the coffee value chain.	- # of hectares of coffee under restored and climate-resilient agroforestry systems - Number of productive and ecosystem-based assets strengthened against climate change (e.g., nurseries, seed banks, demonstration plots) - # of hectares restored in priority areas within coffee productive landscapes - # of climate-resilient community nurseries established or strengthened	Output 1.2: Targeted population groups covered by warning and advisory services for climate related hazards and threats Output 3.2 Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	1.2.1. Percentage of target population covered by adequate risk-reduction systems. 3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders .	12,511,521

	- # of farmers with access to climate information for coffee management - # of Farmer Field Schools (FFS) operating with a climate resilience focus	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1: No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	
Outcome 2. Through strengthened local financial institutions and mechanisms, small coffee producers have improved access to inclusive financing for climate-resilience agriculture	- # of producers with access to climate-resilient credit for productive renovation through strengthened local financial institutions and project-supported finance mechanisms - # of producers receiving climate-smart financial literacy services delivered through strengthened financial institutions, cooperatives, or digital finance platforms	Output 2.2: Increased readiness and capacity of national and sub-national entities to directly access and programme adaptation finance	2.2.1: No. of people benefitting from the direct access and enhanced direct access modality	5,638,710
Outcome 3. Adaptive capacity of smallholder coffee producers strengthened through access to differentiated markets for climate-resilient coffee and improved knowledge and peer-learning	- # of producer organizations meeting minimum commercial readiness criteria for resilient markets - # of producers receiving targeted support to access differentiated, climate-resilient markets - # of trade agreements established with coffee producers using adaptive practices.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1: No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	2,702,305

.[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still appl

B. Implementation Arrangements

The United Nations International Fund for Agricultural Development (IFAD) submits this project in its capacity as an accredited Multilateral Implementing Entity (MIE) to the Adaptation Fund. As MIE, IFAD will be responsible for project cycle management and will provide oversight for financial management, procurement processes, monitoring and evaluation, and compliance with Adaptation Fund policies. IFAD will supervise implementation progress, ensure reporting quality, and provide technical support throughout the life of the project. IFAD will also verify compliance with its Social, Environmental and Climate Assessment Procedures (SECAP), ensuring that the project adheres fully to the Adaptation Fund's Environmental and Social Policy, Gender Policy, and Indigenous Peoples considerations, including respect for cultural identity, Free, Prior and Informed Consultation, and gender responsiveness.

It is proposed that the Project Steering Committee (PSC) be chaired by the Secretaría de Agricultura y Desarrollo Rural (SADER) at the federal level, in coordination with the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) for alignment with national climate policy, and the Secretary of Finance and Public Credit (SHCP), the National Authority for the AF.

At the request of SADER, the Food and Agriculture Organization of the United Nations (FAO) will act as the Executing Entity**.** FAO will therefore be responsible for overall execution of the project on a performance- and results-based basis, including technical coordination, operational management, supervision of field activities, procurement, safeguards implementation, and timely reporting to IFAD and the PSC. FAO will ensure that activities across Components 1–3 are implemented coherently, that community-level engagement is culturally appropriate and gender-responsive, and that financial and operational procedures comply with both FAO and Adaptation Fund standards.

FAO will establish a dedicated **Project Management Unit (PMU)** under the oversight of SADER and the PSC. The PMU will be responsible for:

(i) day-to-day operational management of the project;
(ii) coordination with federal and state entities;
(iii) preparation of the AWPB, M&E plans, knowledge products, and safeguards documentation;
(iv) preparation of technical and financial reports for IFAD, the Adaptation Fund, and the Government; and
(v) ensuring efficient use of project funds and alignment with project objectives.

All PMU positions will be recruited competitively and will be subject to IFAD's no-objection. Under the guidance of the PSC and the supervision of IFAD, the PMU will coordinate closely with SADER's directorates, state-level agricultural offices, and producer organizations, ECAs (Farmer Field Schools), and Indigenous community authorities across the three states.

SADER's national leadership, FAO's execution capacity, and IFAD's oversight role together provide a solid institutional framework for achieving the project's adaptation, gender, and social inclusion objectives.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[2] *Provide the name and position of the government official and indicate date of endorsement. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template;*

Ms. Regina Rosales Talamas Primary Contact Point Director General in the Ministry of Finance and Public Credit and International Affairs Unit	Date: January 29th, 2025

B. **Implementing Entity certification** *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and National Determined Contribution 3.0, and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Mr. Pierre-Yves Guédez Lead Climate and Environmental Funds Environment, Climate, Gender and Social Inclusion Division Mr. Juan Carlos Mendoza Casadiegos Director Environment, Climate, Gender and Social Inclusion Division	
Date: *(Month, Day, Year)*	Tel. and email: p.guedez@ifad.org
Project Contact Person: Mr. Daniel Anavitarte Mexico Country Director	
Tel. And Email: d.anavitarte@ifad.org	

Annex 1 Letter of endorsement by the National Authority

Hacienda
Secretaría de Hacienda y Crédito Público

Subsecretaria de Hacienda y Crédito Público
Unidad de Crédito Público y Asuntos Internacionales de Hacienda
Dirección General encargada de Foros Internacionales y Financiamiento Sostenible

ADAPTATION FUND

Oficio No. 305.- F.-004/2026
Mexico City, January 29th, 2025

Letter of Endorsement by Government of Mexico

Ministry of Finance and Public Credit

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email:Secretariat@Adaptation.Fund.org
Fax: 202522 3240/5

Subject: Endorsement for **"PROGRAM FOR THE RESILIENCE OF SMALL AND MEDIUM-SIZED COFFEE AND COCOA PRODUCERS IN MEXICO"**

In my capacity as primary contact point (with signing authority) of Mexico's Designated Authority, the Ministry of Finance and Public Credit, before the Adaptation Fund, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Mexico.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agricultural Development (IFAD) and executed by the Food and Agriculture Organization of the United Nations (FAO).

Sincerely,

Regina Rosales T.

Regina Rosales Talamas
Primary Contact Point (with signing auhority),
Director General in the Ministry of Finance and Public Credit, Public Credit and International Affairs Unit, regina_rosales@hacienda.gob.mx,
Ph. (+52) 55 3688 1704).

2026 año de Margarita Maza

Insurgentes Sur 1971, Torre III, Piso 3, Col. Guadalupe Inn C.P. 01020, Álvaro Obregón, Ciudad de México
Tel: (55) 3688 1704, www.gob.mx/shcp

Revised PFG Submission Form[1]

Project Formulation Grant (PFG)

Submission Date:

Adaptation Fund Project ID:
Country/ies: Mexico
Title of Project/Programme: Programme for the resilience of smallholder producers in Mexico – AdaptCafé

Type of IE (NIE/RIE/MIE): MIE
Implementing Entity: International Fund for Agricultural Development (IFAD)
Executing Entity/ies: Food and Agriculture Organisation (FAO)

A. Project Preparation Timeframe

Start date of PFG	November 2026
Completion date of PFG	November 2027

B. Proposed Project Preparation Activities ($)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2]
Activity 1. Field studies and stakeholder consultations to validate the project design and inform full proposal development	- Validated field-based evidence to inform the full proposal; - Refined project design and targeting approach; - Stakeholder consultation report - Stakeholder engagement plan for project design and implementation.	17,250	IFAD with support from relevant Government Agencies will conduct field visits to the project locations and potential beneficiaries and conduct design workshops with different stakeholders in Oaxaca, Chiapas, Guerrero.

[1] As presented in AFB/PPRC.33/40 Annex 1.
[2] The proposal should include a detailed budget with budget notes indicating the break- down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

Activity 2. Detailed technical analysis of project components, outputs, activities, and implementation arrangements.	- Refined technical design for the project	20,000	Desk work with experts to assess the feasibility of proposed technologies and practices and define the project's components, outputs, and activities.
Activity 3. Development of the project's results framework, costing, and detailed budget	- Results framework - Detailed costing of project activities - Full project budget	10,000	Expert's work for the definition of the project log-frame, results framework, and budget.
Activity 4. Economic and financial analysis	- Economic and financial analysis	10,000	Economist to prepare the economic and Financial analysis.
Activity 5. Gender assessment and social inclusion analysis	- Gender Assessment - Gender Action Plan (GAP)	15,000	Gender expert for field activities and survey to produce the gender analysis for the project.
Activity 6. Environmental and social risk assessment, including screening of environmental impacts and mitigation measures	- Updated environmental and social screening/risk categorization - Environmental and Social Management Plan (ESMP)	15,000	ESS expert for field activities and survey for the final EIA reports.
Activity 7. Development of the FPIC process and engagement of Indigenous communities in project design and implementation	- Free, Prior and Informed Consent (FPIC) - Indigenous Peoples Plan	10,000	Indigenous Peoples expert to conduct consultation and develop the plan
Activity 8. Preparation of the full project proposal	- Full Project Proposal	40,000	Consolidate and finalize full project proposal for submission.
Sub-total		**137,250**	
Implementing Entity's Management Fee (8.5%)		12,750	
Total Project Formulation Grant		**150,000**	

Activity 1. Field studies and stakeholder consultations to validate the project design and inform full proposal development

Field studies and consultative workshops will be undertaken in the proposed project areas to validate the project design, refine targeting, and ensure that the full proposal reflects the actual climate, socio-economic, and institutional conditions faced by smallholder coffee producers. Field assessments will gather evidence on climate vulnerability, production constraints, landscape degradation, post-harvest practices, institutional capacity, and the status of existing support systems such as Farmer Field Schools, nurseries, and producer organisations. Consultative workshops at national, state, and local levels will engage key stakeholders—including producers, women's and youth groups, Indigenous representatives, government agencies, technical institutions, and financial actors—to review the concept note, validate implementation arrangements, and identify priorities, barriers, and opportunities for scaling climate-resilient coffee systems.

This combined process will help ensure that the project is context-specific, technically feasible, inclusive, and aligned with local needs, institutional realities, and existing public programmes. Funding is required for technical field missions, stakeholder consultations and workshops, travel, facilitation, interpretation where needed, and documentation of findings for the full proposal. Outputs include:

- Validated field-based evidence to inform the full proposal;
- Refined project design and targeting approach;
- Stakeholder consultation report; and
- Stakeholder engagement plan for project design and implementation.

Activity 2. Detailed technical analysis of project components, outputs, activities, and implementation arrangements

A more detailed technical analysis will be necessary to further develop and substantiate the project's components, outputs, and activities for the full proposal. This includes refining the adaptation logic of the intervention, confirming the suitability of the proposed technological packages, and defining how different project elements will interact across production resilience, climate services, post-harvest adaptation, inclusive finance, and market access. The analysis will also examine implementation arrangements, institutional roles, delivery mechanisms, and the operational feasibility of utilising existing structures such as Farmer Field Schools, producer organisations, public programmes, and financial intermediaries. This work is essential to ensure a coherent and feasible project design, with clear causal pathways between investments and adaptation outcomes. Funding is needed for specialised technical expertise, coordination among national and international experts, review of existing data and evidence, and the preparation of the technical design that will underpin the full proposal. Expected output:

- Refined technical design for the project, including validated components, outputs, activities, and intervention packages and Theory of Change.

Activity 3: Development of the project's logical framework, results framework, costing, and detailed budget

The development of the full proposal will require a robust results architecture, including a logical framework, results framework, indicators, targets, means of verification, and assumptions. This process involves defining the hierarchy of results from outputs to outcomes and impact, ensuring alignment with both Adaptation Fund requirements and the project's adaptation logic. It also requires costing activities and developing a detailed budget that accurately represents the scope and sequence of investments across the three components, which include technical assistance, infrastructure and equipment, training, field implementation, and knowledge management. Since the project integrates productive adaptation, post-harvest systems, inclusive finance, and market access, a meticulous costing exercise is vital to ensure realism, efficiency, and internal coherence among components. Expected outputs include:

- Complete logical framework and results framework for the full proposal, including indicators, baselines, targets, means of verification, and assumptions;
- Detailed costing of project activities across all components;
- Full project budget aligned with the results framework, implementation arrangements, and Adaptation Fund requirements.

Activity 4. Economic and financial analysis

Additional analysis will also be needed to assess the economic and financial justification of the project, including the rationale for blending grant support with financial inclusion measures and the expected benefits of stabilizing production, reducing losses, and improving access to differentiated markets. Funding is therefore needed to support climate risk analysis, vulnerability assessment, and economic/financial analysis, as well as to integrate these findings into the proposal narrative. Expected output:

- Economic and financial analysis demonstrating the justification, cost-effectiveness, and expected adaptation benefits of the proposed investments.

Activity 5. Gender assessment and social inclusion analysis

A dedicated gender assessment and social inclusion analysis will be carried out to ensure that the project design reflects the differentiated climate vulnerabilities, capacities, constraints, and opportunities of women, men, youth, and Indigenous Peoples in coffee-producing territories. Combining desk review, field consultations, and disaggregated data collection, the assessment will analyse roles, access to assets and services, participation in decision-making, and barriers to equitable participation in project benefits across coffee production, post-harvest activities, finance, extension, and markets. It will also identify risks of exclusion, unequal benefit sharing, and any context-specific concerns related to gender-based violence or harassment during implementation.

The findings will inform gender-responsive and socially inclusive project design measures, including participation targets, tailored outreach strategies, culturally appropriate approaches, and actions to strengthen the leadership of women, youth, and Indigenous producers. The assessment will also provide the basis for the project's Gender Action Plan and for integrating relevant indicators, targets, budget provisions, and monitoring arrangements into the results framework. Funding is required for specialized expertise, field data collection, consultations, analysis, and integration of the findings into the full project design. Outputs include:

- Gender Assessment with sex-disaggregated and socially inclusive baseline information to inform the results framework
- Gender Action Plan (GAP) with implementation actions, indicators, responsibilities, and budget provisions

Activity 6. Environmental and social risk assessment, including screening of environmental impacts and mitigation measures.

Given the nature of the proposed interventions, an environmental and social risk assessment will be undertaken to identify potential risks, determine the safeguard principles triggered by the project, and define the corresponding mitigation, management, and monitoring measures, in line with the Adaptation Fund's Environmental and Social Policy. Building on the preliminary concept-stage screening, the assessment will review risks related to land use, biodiversity, water resources, soil disturbance, waste and effluent management, occupational and community health and safety, labour conditions, equitable access to benefits, and possible impacts on vulnerable groups, including Indigenous Peoples.

The assessment will inform the preparation of the safeguard instruments required for the full proposal and define the mitigation actions, institutional responsibilities, monitoring requirements, capacity needs, and budget needed to manage risks during implementation. Outputs include:

- Updated environmental and social screening/risk categorization
- Environmental and Social Management Plan (ESMP) proportionate to the project's risk profile

Activity 7. Development of the FPIC process and engagement of Indigenous communities in project design and implementation.

A dedicated process will be undertaken to ensure the meaningful and culturally appropriate engagement of Indigenous communities in project design and implementation and, where relevant, to comply with the principle of Free, Prior and Informed Consent (FPIC). This is necessary because the project will operate in coffee-producing territories where Indigenous Peoples are present and where activities may affect their livelihoods, natural resources, traditional practices, or access to benefits. The activity will include stakeholder mapping, consultation with Indigenous authorities and communities, assessment of FPIC requirements, and the design of culturally appropriate engagement processes using local languages and methods that respect community decision-making systems.

The process will help identify community priorities, potential risks, conditions for participation, and barriers to equitable inclusion, and will inform measures to ensure that the project design and implementation reflect Indigenous rights, knowledge, and development priorities. Funding is required for specialized expertise, field consultations, translation and interpretation where needed, and preparation of the relevant documentation for the full proposal. Expected outputs include:

- Documented FPIC and Indigenous engagement process
- Indigenous Peoples Plan with recommendations for integrating Indigenous considerations and equitable participation into the final project design, implementation arrangements, and monitoring framework.

Activity 8. Preparation of the full project proposal

The final PFG-supported activity will be the preparation of the full Adaptation Fund project proposal and all supporting documentation required for submission. This will involve consolidating the technical, financial, environmental, social, gender, and institutional analyses into a coherent proposal aligned with Adaptation Fund templates and review expectations. The proposal will need to clearly articulate the climate rationale, project design, implementation arrangements, results framework, budget, risk management measures, sustainability strategy, and monitoring approach. Expected output:

- Full project proposal

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address

Annex 3 Indigenous Peoples Targeted by the Project

1. Overview

The project is implemented in three of the most culturally diverse and Indigenous-majority coffee regions in Mexico: Chiapas, Oaxaca, and Guerrero. Mexico is home to more than 39.2 million people who self-identify as Indigenous (30.3% of the national population) and 7.4 million speakers of Indigenous languages (5.9%) . The project specifically targets Indigenous communities where coffee is both a primary livelihood and a central element of cultural identity, land stewardship, and community governance.

Across the three states, consultation attendance sheets show that a very high proportion of participants self-identified as Indigenous and as speakers of Indigenous languages, with Oaxaca and Guerrero consultations reaching Indigenous representation above 90% and Chiapas including several Indigenous communities from the Soconusco region. These communities reside predominantly in rural, remote, and high-altitude areas characterized by high levels of marginalization, limited infrastructure, and direct exposure to climate risks.

2. Indigenous Peoples Targeted by State

Oaxaca
The project will benefit communities predominantly belonging to the Zapotec peoples, especially in the Loxicha and Sierra Sur regions. Consultation data show extensive use of the Zapoteco language and strong expression of traditional knowledge related to coffee production, agroforestry, and land care. These communities face structural barriers, including limited access to extension services in local languages, high rates of poverty, and restricted financial inclusion. Women and youth additionally face cultural and institutional barriers to owning land and participating in producer governance structures.

Guerrero
The project area includes communities primarily from the Tlapaneco (Me'phaa), Mixteco, and related Indigenous groups in the Montaña region. The Montaña is one of the most Indigenous and economically marginalized areas of Mexico, where more than 75% of residents live in poverty, with Indigenous women in rural areas facing extreme poverty rates of 37% . During consultations in Paraje Montero and surrounding communities, almost all participants self-identified as Indigenous and as speakers of Tlapaneco or Mixteco. These communities maintain strong communal governance, collective decision-making traditions, and agroecological practices that are essential for climate-resilient coffee systems.

Chiapas
Chiapas consultations included Indigenous communities from the Soconusco region, where several Indigenous groups participate in ECAs and coffee farms. Although self-identification rates varied in comparison to Oaxaca and Guerrero, Indigenous peoples in Chiapas face similar barriers: limited access to land titles, lower access to social protection (only 2 in 10 Indigenous women have social security) , linguistic barriers in extension and financial services, and greater exposure to drought and extreme climate variability that directly affects coffee yields and household food security.

3. Social, Cultural, and Economic Characteristics

Across all three states, Indigenous Peoples in the project area share common characteristics relevant for project design and implementation:

- Strong reliance on smallholder, shade-grown coffee systems, often managed collectively or

within extended family units
- High levels of poverty, with Indigenous rural women facing the highest rates nationally (up to 75% in poverty)
- Linguistic diversity, requiring bilingual facilitation, materials in Indigenous languages, and Indigenous-speaking extension agents
- Collective governance structures, including assemblies, traditional systems of cargo, and communal land stewardship
- High exposure to climate impacts, including drought, heat stress, irregular rainfall, soil degradation, and pest outbreaks
- Unequal access to public services, including security, health, education, financial services, and agricultural extension
- Gender-specific barriers, including limited land rights, heavy unpaid care burdens, low formal financial access, and limited mobility for women

These characteristics reinforce the need for culturally appropriate, gender-responsive, and community-driven adaptation strategies.

4. Project Commitments to Indigenous Peoples

The project integrates a rights-based, culturally respectful approach aligned with national legislation and AF policies. Key commitments include:

- ✓ Culturally appropriate consultation and participation, respecting communal decision-making processes and Indigenous languages
- ✓ Inclusive ECAs and training, facilitated by bilingual or Indigenous-speaking technical staff
- ✓ Support for Indigenous women and youth, addressing land access barriers, time constraints, and limited market participation
- ✓ Strengthening of traditional agroforestry practices, which align closely with Indigenous stewardship
- ✓ Gender- and Indigenous-sensitive extension services, including safe and accessible training spaces
- ✓ Respect for collective land rights, governance systems, and community norms
- ✓ Ongoing engagement through culturally relevant communication, feedback mechanisms, and co-design of activities