



Climate Adaptation Bonds for Agriculture Resilience

**Case: FIRA's green
resilience bond**

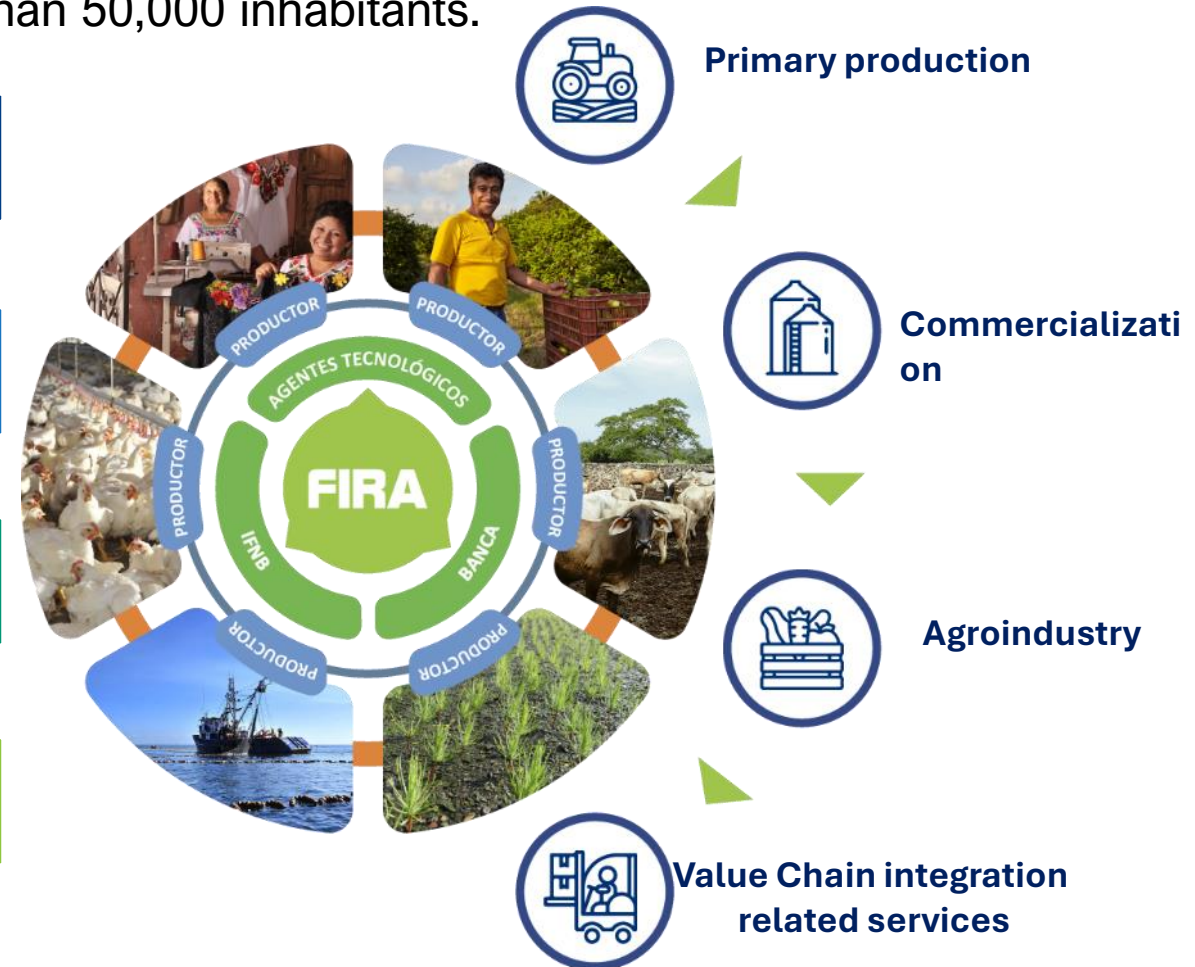
September 26th / 2024.



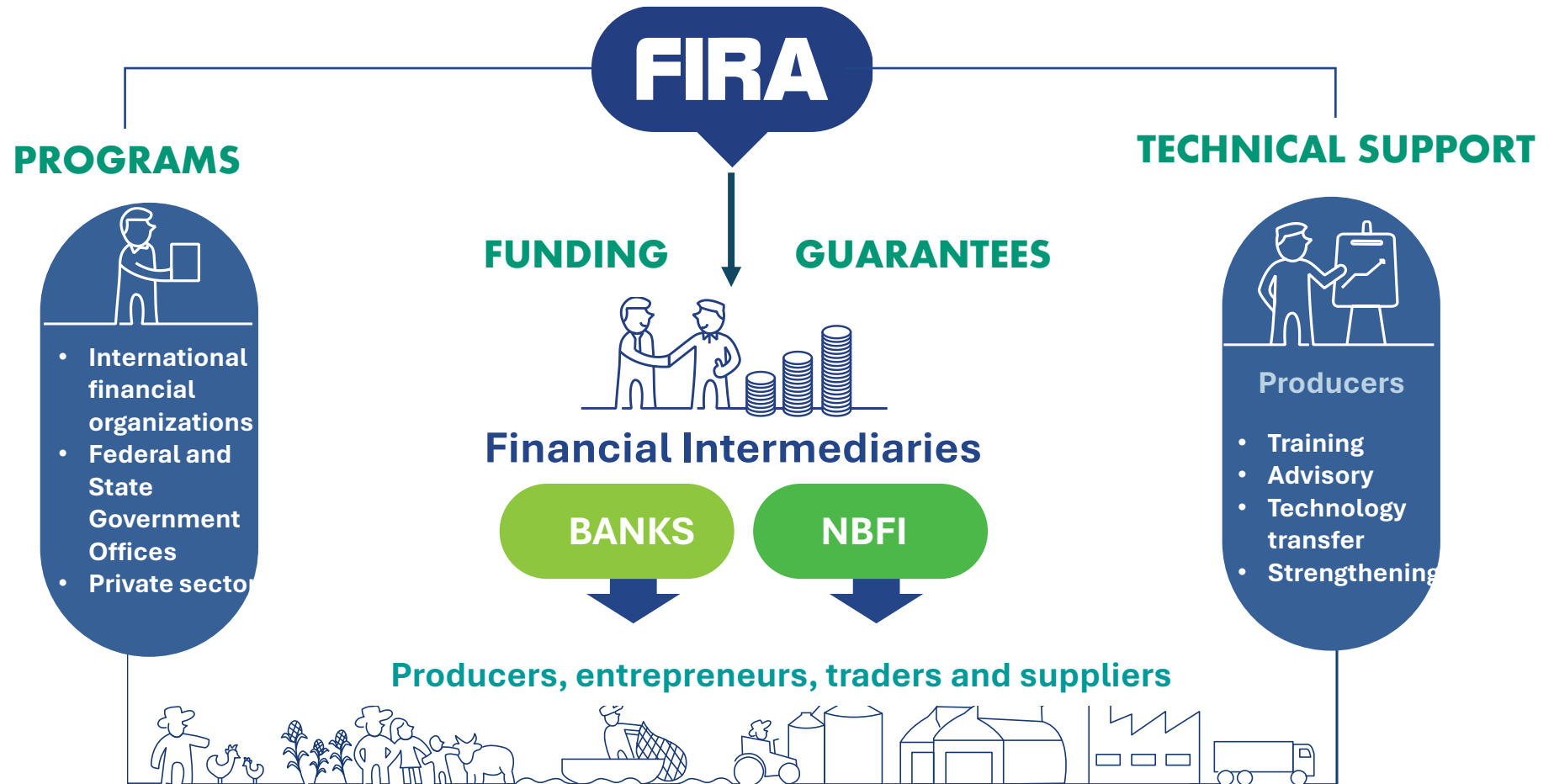
Created in 1954 by the Ministry of Finance (SHCP) and the Central Bank of Mexico (Banco de Mexico).

We support any agri-food sector related activity in any part of the country; and non-traditional activities in cities with less than 50,000 inhabitants.

FONDO	Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura.
FEFA	Fondo Especial para Financiamientos Agropecuarios.
FEGA	Fondo Especial de Asistencia Técnica y Garantía para Créditos Agropecuarios.
FOPESCA	Fondo de Garantía y Fomento para las Actividades Pesqueras.



As a second-tier Development Bank, our business model is supported by a Financial Intermediaries' network, as the channel for financing producers and companies.



Priority Objectives

FIRA governs its actions with the **2020-2024 Institutional Program**, which considers three priority objectives. Each one, with specific strategies and actions that contribute favorably to the attention of the agri-food sector and the rural population.



OP1

Promote **financial inclusion** and lower access barriers to financial services for producers, with an emphasis on smaller-scale ones.



OP2

Promote increased **productivity and efficiency** in all value chain links of the field.



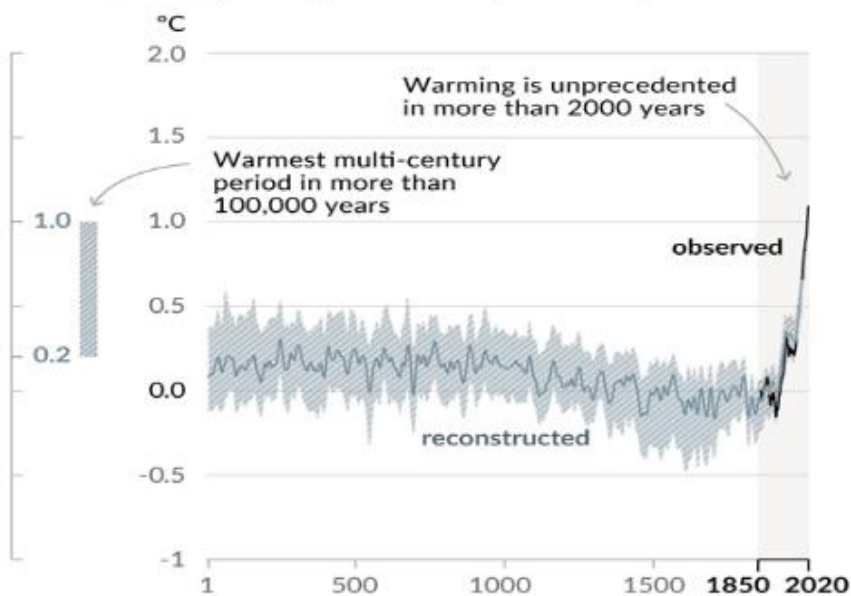
OP3

Contribute to the development of a responsible and **sustainable** agricultural, forestry and fishing sector.

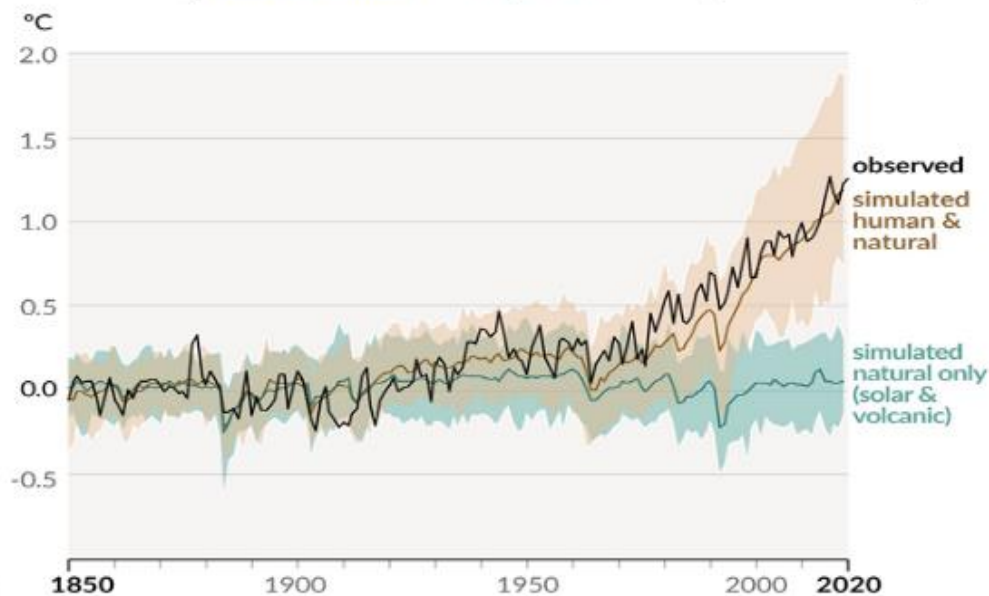
There is enough scientific evidence to affirm that the global temperature of the planet is increasing exponentially.

Changes in global surface temperature relative to 1850-1900

a) Change in global surface temperature (decadal average) as reconstructed (1-2000) and observed (1850-2020)



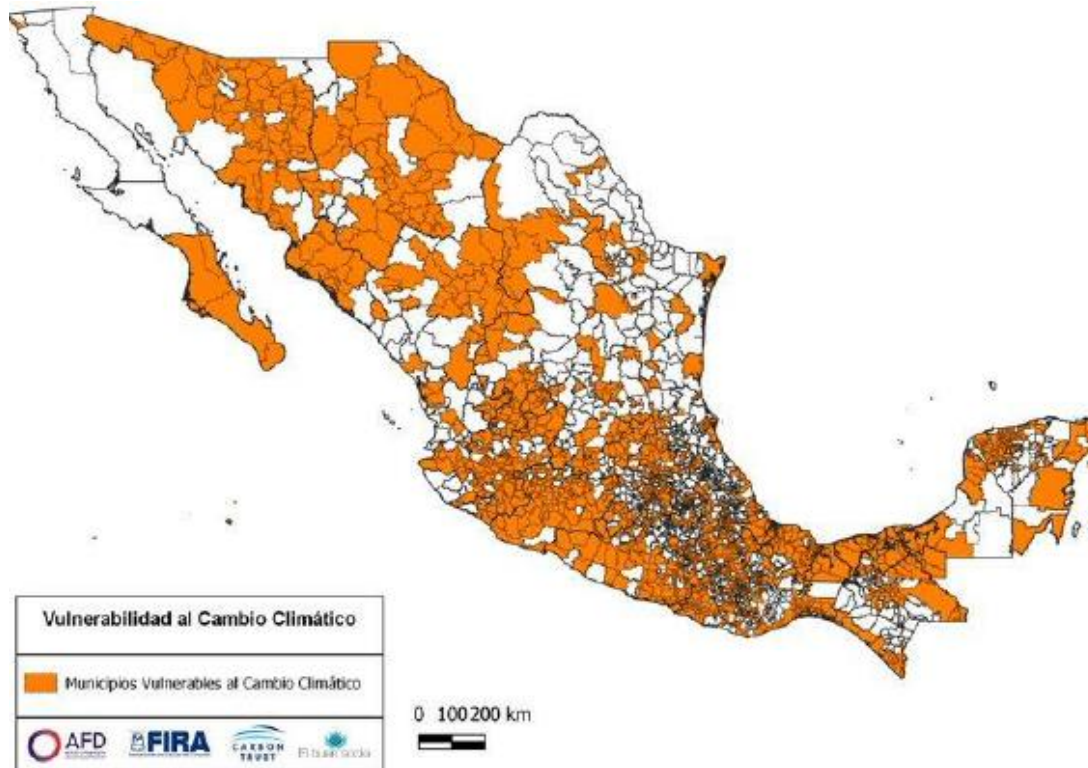
b) Change in global surface temperature (annual average) as observed and simulated using human & natural and only natural factors (both 1850-2020)



- ✓ Climate change will affect agricultural production by negatively **altering crop yields** in the main producing areas.
- ✓ This will **mainly affect small producers** who produce under rainfed conditions and **who lack sufficient resources to adapt to new climatic conditions.**

The effects of climate change for Mexico are expected **to be greater than the global average**, bringing sea level rise, ocean acidification, heat waves, extreme weather events, reduced precipitation, drought and wild fires.

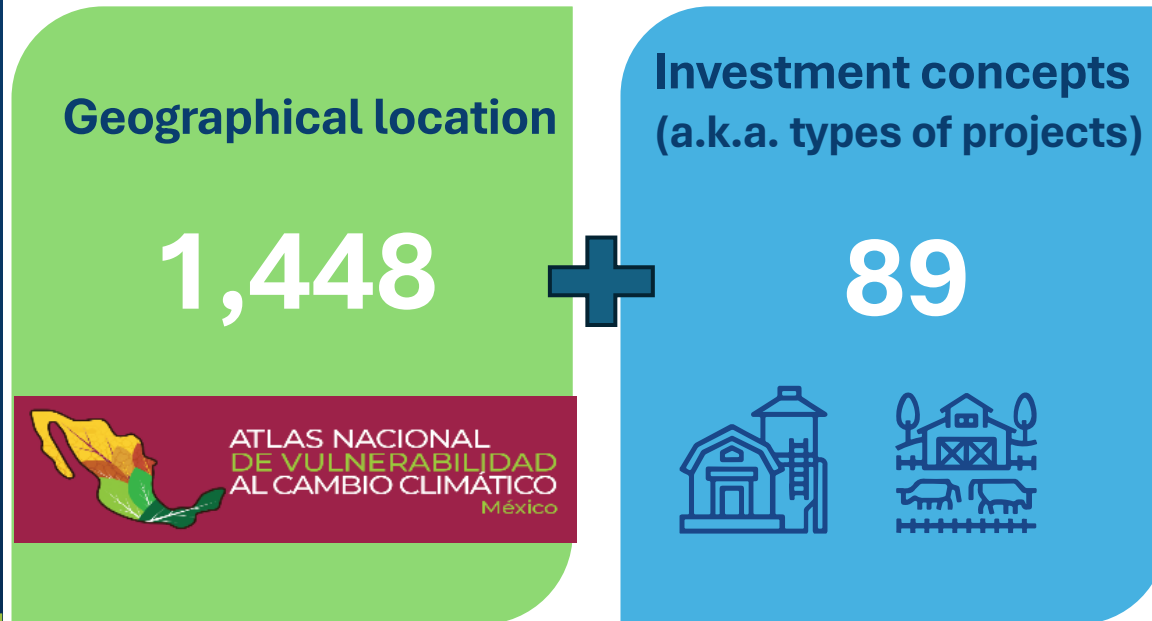
1,448 Municipalities vulnerable to climate change



- Given the evidence of the changes that are certain to occur, **it is necessary to invest in adaptation to the effects of climate change.**
- To this end, the National Institute of Ecology and Climate Change developed the **National Atlas of Vulnerability to Climate Change.**
- This atlas is a tool that analyses specific climate-related problems and aims to show the differential vulnerability of the territory considering current conditions and future scenarios.

Source: Own elaboration based on data provided by National Institute of Ecology and Climate Change of prioritised municipalities, 2019.

The taxonomy developed for FIRA on climate change adaptation and resilience uses two criteria: **geographical location and investment concepts**.



- Due to extreme weather conditions, FIRA undertook a series of actions to address the impacts of climate change, including the development of a **taxonomy for climate change adaptation and resilience**.
- And in the **Sustainable Taxonomy of Mexico (TSM)** the climate change **adaptation component** is one of the environmental objectives.

Developed by:



Analysed and supported by:



In the last 6 years **FIRA** has issued 10 thematic bonds for a total amount of \$27,302 million pesos (ca. US \$1,400 million), in the following categories:



Green bonds

FEFA 18V	\$2,500 (US \$127.5 millions)
FEFA 19V	\$2,500 (US \$127.5 millions)
FEFA 20V	\$3,000 (US \$153.1 millions)
FEFA 23V	\$2,985 (US\$152.3 millions)
FEFA 23-2V	\$1,090 (US \$55.6 millions)

Projects with environmental benefits for the agricultural and rural sector, and Green Resilience Bond

■ First Climate Resilience and Adaptation Bond



Gender bonds

FEFA 20G	\$3,000 (US \$153.1 millions)
FEFA 21G	\$3,500 (US \$178.6 millions)
FEFA 23G	\$3,000 (US \$153.1 millions)

Support women's economic autonomy



Social bonds

FEFA 22S	\$3,920 (US \$200 millions)
FEFA 24S	\$1,807 (US \$92.2 millions)

It facilitates access to and use of formal credit for small-scale producers.

Taxonomies of eligible projects

Sustainable Bonds

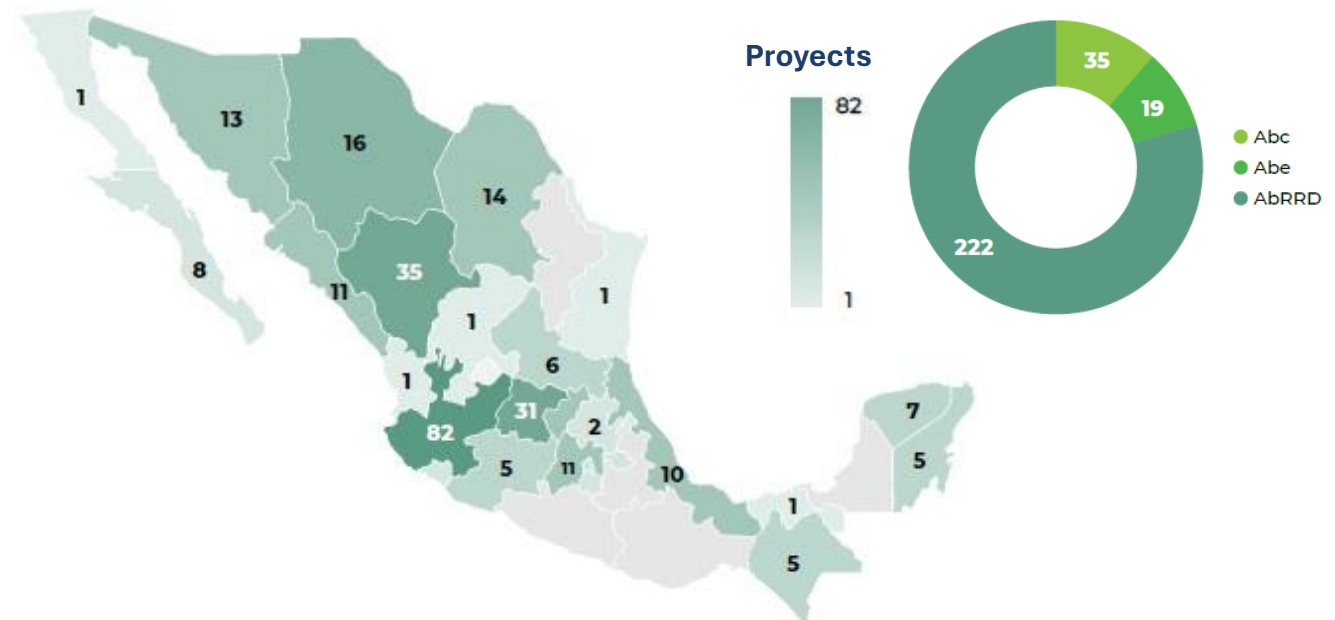
Green bonds

Social Bonds

Category	Eligible categories
Green	1. Sustainable management of natural resources and land use
	2. Sustainable agriculture and livestock
	3. Fishing and aquaculture
	4. Renewable energy
	5. Efficient and resilient water and wastewater management
	6. Energy efficiency
Adaptation and climate resilience	1. Absorption to extreme climate events
	2. Adaptation to extreme climatic events
Financial inclusion	1. Access to financial products and services for producers and enterprises in the agricultural, forestry, fisheries and rural sectors.
	2. Use of financial products and services for entrepreneurs, producers and/or enterprises in the agricultural, forestry, fisheries and rural sectors.
	3. Financial intermediaries that increase the supply of products and services that help lower barriers to financial inclusion.
Gender equality	1. Financial Inclusion (New credit beneficiaries)
	2. Employment and productive initiative
	3. Entrepreneurship

ABC: Community based adaptation
ABE: Ecosystems based adaptation
ABRRD: Reductin of dissasters based adaptation

Geographical distribution and type of projects funded





Thank you

Erick Rodriguez Maldonado

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Categories and KPIs of the First Climate Resilience and Adaptation Bond

Use of Proceeds Category	Eligibility Criteria	Key Performance Indicators
Absorption before extreme climate events	Credits for projects that help reduce or prevent the impacts from extreme climate events in the municipalities with highest vulnerability to climate change according to the climate change vulnerability assessment of INECC, in order to preserve and restore essential functions and structures in the agricultural, forestry, livestock, fishing, food and rural sectors.	<ul style="list-style-type: none"> i. Volume of credit granted to increase the absorption capacity to face the impact of extreme climate events. ii. Volume of credit disbursed to increase the absorption capacity in municipalities with a vulnerability index of 2 and 3, according to the classification of the National Atlas of Vulnerability to climate change of the INECC. iii. Number of beneficiary borrowers with increased the absorption capacity in the face of extreme weather events.
Adaptation to extreme climate events	Credits for projects that contribute to adjust, modify or change the characteristics of a productive system to better respond to climate change induced shocks and stresses in the agricultural, forestry, fishing, food and rural sectors, in the municipalities with highest vulnerability to climate change according to the climate change vulnerability assessment of INECC.	<ul style="list-style-type: none"> i. Volume of credit disbursed to increase adaptive capacity to the impact of extreme climate events. ii. Volume of credit disbursed to increase adaptive capacity in municipalities with vulnerability index of 2 and 3, according to the classification of the National Atlas of Vulnerability to climate change of the INECC. iii. Number of beneficiary borrowers with the productive systems with increased adaptive to withstand extreme climate events.

Taxonomía de adaptación y resiliencia al cambio climático de FIRA

89 conceptos de inversión

Concepto de Inversión Elegible

POZO PROFUNDO ADEME
EQUIPO BOMBEO POZO PROFUNDO
DRENES CONSTRUCCION
DRENAJE PARCELARIO
DRENES MANTENIMIENTO
DEPOSITOS DE AGUA
COSECHA DE AGUA PARA RIEGO AGRICOLA
EQUIPO DE BOMBEO
POZO PROFUNDO EQUIPO PERFORACION
POZO PROFUNDO PERFORACION
POZO PROFUNDO REHABILITACION
POZO PROFUNDO ESTUDIO/SONDEO
NORIAS
PRESA ALMACENADORA CONSTRUCCION
PRESA ALMACENADORA MANTENIMIENTO
PRESA DERIVADORA CONSTRUCCION

Concepto de Inversión Elegible

PRESA DERIVADORA MANTENIMIENTO
MANTENIMIENTO CONSTRUCCS E INSTALAC
GALERAS
CASAS CABAÑAS VIVIENDA RURAL
COBERTIZOS
CAMINOS INTERNOS EN EXPLOTACIONES
CAMINOS VECINALES
ESTACION CLIMATOLOGICA
CONSTRUCCIO
FRIGORIFICOS
HORNOS
PUENTES
SANITARIOS RODANTES O FIJOS
SILOS
TANQUES
TOLDOS Y MALLAS PROTECTORAS
ZAHURDAS

Concepto de Inversión Elegible

PLANTAS Y GENERADORES ELECTRICIDAD
LABORATORIOS CONSTRUCCION
LABORATORIOS EQUIPAMIENTO
OBRAS DE CAPTACION DE AGUA
CORRALES
CARROS DE CAMPO
CLASIFICADORA SELECCIONADORA
COMPRESORES
DESGRANADORAS
EMPACADORAS DE FORRAJE
EQUIPO PARA ENSILAR
ESCREPAS
SISTEMAS DE ENFRIAMIENTO
GRUAS MECANICAS
LAVADORA
MOTOCONFORMADORA
MAQUINARIA PESADA



Taxonomía de adaptación y resiliencia al cambio climático de FIRA

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Concepto de Inversión Elegible

MOLINO
 NIVELADORA
 NIVELADORA LASSER
 ESTACION CLIMATOLOGICA EQUIPO
 PRENSAS
 EQUIPO COMUNICACION (RADIO TELEFON
 REVOLVEDORAS
 SECADORAS
 SEMBRADORAS DE PRECISION
 TANQUE ENFRIADOR
 TRACTOR CAT 1 (HASTA 45 HP) NUEVO
 TRACTOR CAT 3 (MAS DE 100 HP) NUEVO
 REPARACIONES Y/O REHABILITACIONES
 TRASCABO
 VEHICULOS DE CAMPO
 ZANJEADORAS

Concepto de Inversión Elegible

DRAGAS
 NIVELACIONES
 SUBSOLEOS
 SUELDOS Y SALARIOS
 CONGELADORA PROD. PESQUEROS
 EMBARCACION MAYOR NUEVA
 EMBARCACION MAYOR REHABILITACION
 EMBARCACION MENOR NUEVA
 EMBARCACION MENOR REHABILITACION
 CONSTRUCCION DE ESTANQUERIA
 CAPITAL DE TRABAJO
 BODEGAS Y ALMACENES
 MAQUINARIA Y EQUIPO DE PROCESO
 EQUIPO DE TRANSPORTE
 REPARACIÓN DE MAQUINARIA Y EQUIPO
 REPARACION DE EQUIPO DE COSECHA

Concepto de Inversión Elegible

DRENAJE INTERPARCELARIO
 MODERNIZACIÓN DE ESTANQUERÍA
 INFRAESTRUCTURA PARA PROD. PESQUEROS
 MOTOGENERADORES
 SISTEMAS DE BOMBEO
 CONSTRUCCIONES INDUSTRIALES
 EQUIPOS DE COMUNICACION E INFRAESTRUCTURA
 TRACTOR CAT 2 (HASTA 100 HP) NUEVO