Fondo Especial para Financiamientos Agropecuarios (FEFA)

PRE-ISSUANCE VERIFICATION LETTER

PROTECTED AGRICULTURE: MEXICO AND WATER INFRASTRUCTURE CRITERIA OF THE CLIMATE BONDS STANDARD

Type of engagement: Assurance Engagement
Period engagement was carried out: October 2018 to March 2019
Approved verifier: Sustainalytics
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Scope and Objectives

Fondo Especial para Financiamientos Agropecuarios (FEFA), has engaged Sustainalytics to review and verify that FEFA's green bond meets the requirements under the Protected Agriculture: Mexico and Water Infrastructure criteria of the Climate Bonds Standard.

FEFA is one of the four trust funds that make up Fideicomisos Instituidos en Relación con la Agricultura (FIRA), and was created in 1965 to facilitate access to financing related to agriculture, livestock, poultry, agro-industry, fisheries and other related activities that are carried out in rural areas. FIRA is a Mexican second-tier development financial institution which offers credit and support to the agricultural and fisheries sectors and promotes rural industrial development. Founded by the Government of Mexico in 1954, the Institution consists of four trust funds[1] with varying missions and has 131 offices throughout Mexico, particularly in small communities.

FEFA is issuing a green bond to finance or refinance loans within its portfolio that it has identified as environmentally beneficial, specifically in the areas of water efficiency and environmentally sustainable agriculture.

Climate Bonds Standards Criteria

Pre-issuance requirements under Climate Bond Standards Version 2.1:

- Protected Agriculture: Mexico
  - Mitigation
  - Adaptation & Resilience
- Water Infrastructure
  - Mitigation
  - Adaptation & Resilience

Issuing Entity's Responsibility

FEFA was responsible for providing information and documents relating to:

- The details concerning the selection process for the Nominated Projects
- The details of the Nominated Projects
- The management systems for internal processes and controls for Nominated Projects, including: tracking of proceeds, managing unallocated proceeds and Earmarking funds to Nominated Projects

[1] These four trusts are the Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura (FONDO), which provides credit for short-term financing and working capital; the Fondo Especial para Financiamientos Agropecuarios (FEFA), which provides credit for long-term financing to the agriculture and agro-industry sectors; the Fondo de Garantía y Fomento para las Actividades Pesqueras (FOPESCA), which provides credit to institutions serving the fishery and aquaculture sectors; and the Fondo Especial de Asistencia Técnica y Garantía para Créditos Agropecuarios (FEGA), which provides technical assistance, guarantees, and other support.

- The details of commitments for reporting prior to issuance, including: investment areas, management of unallocated proceeds and frequency of periodic Assurance Engagements

Independence and Quality Control

Sustainalytics, a leading provider of ESG and corporate governance research and ratings to investors, conducted the verification of FEFA's green bond, issued to finance Nominated Projects, and provided an independent opinion informing FEFA as to the conformance of the green bond with the Pre-Issuance requirement and the Protected Agriculture: Mexico, and Water Infrastructure criteria of the Climate Bonds Standard.

Sustainalytics has relied on the information and the facts presented by FEFA. Sustainalytics is not responsible if any aspect of the Nominated Projects referred to in this opinion including estimates, findings, opinions, or conclusions are incorrect. Thus, Sustainalytics shall not be held liable if any of the information or data provided by FEFA management and used as a basis for this assessment were not correct or complete.

Sustainalytics makes all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight over the assessment of the bond.

Verifier's Responsibility

The work undertaken as part of this engagement included conversations with relevant FEFA employees and review of relevant documentation to confirm the green bond's conformance with the Climate Bonds Certification Pre-Issuance Requirements, which include:

- Conformance of FEFA's green bond with the Climate Bonds Standard Version 2.1;
- Conformance with the Technical Criteria on Protected Agriculture: Mexico and Water Infrastructure
- Conformance with the Internal Processes & Controls requirements
- Conformance with Reporting Prior to Issuance requirements

Basis of the Opinion

Sustainalytics conducted the verification in accordance with the Climate Bond Standard Version 2.1 and with the International Standard on Assurance Engagements 3000 – Assurance Engagements other than Audits or Reviews of Historical Information.

Sustainalytics planned and performed the verification by obtaining evidence and other information and explanations that Sustainalytics considers necessary to give reasonable assurance that the FEFA Nominated Projects meet the requirements of the Climate Bond Standard. Upon reviewing evidence and other information, Sustainalytics is of the opinion that FEFA will ensure compliance with Climate Bond Standard requirements.

Conclusion

With the issuance of its inaugural green bond, FEFA is aiming to finance protected agriculture and water management projects that have an overall positive impact on the environment and promote the transition to a low carbon and climate resilient economy. Based on the limited assurance procedures conducted of FEFA's protected agriculture and water infrastructure projects under the Projected Agriculture: Mexico and Water Infrastructure criteria of the Climate Bonds Standard, Sustainalytics believes that, in all material respects, FEFA's Nominated Projects are in conformance with the Projected Agriculture: Mexico and Water Infrastructure criteria of the Climate Bonds Standard Pre-Issuance Requirements.

Schedule 1: Detailed Overview of Nominated Projects and Assets2

Details of the Nominated Projects are provided below, by category:

Type of investment	Number of projects
Irrigation, aspersion	136
Irrigation, dripping	194
Irrigation, micro-aspersion	42
Total	**372**

[2] Nominated projects and assets provided by FEFA on October the 4th 2018. The final list may vary according to credit portfolio fluctuations and final FEFA nomination consideration of individual projects.

Schedule 2A: Pre-Issuance General Requirements

Selection of Nominated Projects and Assets:	*1.1* Statement on the environmental objectives of the bond *1.2* Confirmation that Nominated Projects and Assets meet the Climate Bonds criteria *1.3* Document a list of Nominated Projects and Assets *1.4* Confirmation that Nominated Projects and Assets will not be nominated to other Climate Bonds *1.5* Confirmation that Net Proceeds of the Green Bond shall not be greater than the value of the Nominated Projects and Assets
Internal Processes and Controls	*2.1.1* Tracking of proceeds *2.1.2* Managing of unallocated proceeds *2.1.3* Earmarking funds to Nominated Projects and Assets
Reporting Prior to Issuance	*3.1.1* Investment area of Nominated Projects and Assets *3.1.2* Intended types of temporary investments for the management of unallocated proceeds *3.1.3* Approach of Verifier *3.1.4* Whether periodic Assurance Engagement will be undertaken, and the expected frequency of any periodic Assurance Engagements

Schedule 2B: Conformance to the Pre-Issuance Requirements

Procedure Performed	Factual Findings	Error or Exceptions Identified
Verification of requirements specified under Selection of Nominated Projects and Assets	*1.1* The objective of the bond is to primarily use proceeds to finance or refinance loans within its portfolio that it has identified as environmentally beneficial, specifically in the areas of water efficiency and environmentally sustainable agriculture. *1.2* The Nominated Projects and Assets meet the Protected Agriculture: Mexico or Water Infrastructure criteria of the Climate Bond Standard. *1.3* The Nominated Projects and Assets include: • Refer to Schedule 1, above *1.4* FEFA's management confirms that the projects shall not be nominated to other Climate Bonds. *1.5* FEFA's management confirms that the net proceeds of the bond shall not be greater than the value of the projects.	None
Verification of requirements specified under Internal Processes and Controls	*2.1.1* FEFA's management confirms that proceeds will be segregated and tracked in a systematic manner and will be exclusively used to finance Nominated Projects. *2.1.2* FEFA's management confirms that until allocation to eligible projects, unallocated funds will be held in liquid assets, bank accounts of the institution, or temporarily invested in line with FEFA's liquidity management policy. *2.1.3* FEFA's management has confirmed that the institution will use its internal accounting and credit management systems to track the green bond proceeds and will register eligible projects in that system.	None
Verification of requirements specified under Reporting Prior to Issuance	*3.1.1* FEFA's management confirms that the proceeds of the transaction will primarily be used to finance and refinance loans to eligible protected agriculture and water resources projects. *3.1.2* FEFA's management confirms that unallocated proceeds will be held in liquid assets, bank accounts of the institution, or temporarily invested in line with FEFA's liquidity management policy. *3.1.3* The bond's offer letter confirms that an approved third party verifier has been appointed to confirm the bond's conformance with pre-issuance requirements of the Protected Agriculture: Mexico and Water Infrastructure of the Climate Bonds Standard. *3.1.4* The bond's offer letter confirms that an approved third party verifier will conduct post-issuance assurance exercised within a year's time to reaffirm conformance of the bond with the Protected Agriculture: Mexico and Water Infrastructure criteria of the Climate Bonds Standard.	None

Schedule 3: Mitigation Assessment and Scorecard for Evaluating the Issuer's Vulnerability Assessment & Adaptation Plan for Water Infrastructure Projects

A. Mitigation Theme

The Mitigation Theme has two major categories: (1) the determination of project- related emissions, and (2) determination of emissions reduced/avoided. Eligibility for certification under this theme is determined through existing methodologies deemed acceptable under the Water Climate Bonds Standard (e.g. CDM, American Carbon Registry, etc.)

Under the guidance of the methodology selected, the Issuer must propose a clear GHG baseline, which must describe the calculations and assumptions (inputs) used to arrive at that baseline. Issuers must also estimate net expected GHG impact (mitigation impact >0) compared to Business As Usual, as well as a credible, independently verifiable, method of tracking impact over the life of the bond. Conservative assumptions, values and procedures must be used to ensure that the GHG emission reductions or removals are not over-estimated.

This GHG data does not need to be made public as part of the verification letter. Once this information has been provided to Sustainalytics, and it can be determined that the projects have a net positive impact regarding GHG emissions, then Sustainalytics will include a statement in the verification letter saying that this data has been assessed and that FEFA complies with the mitigation component of the CBI water infrastructure criteria.

RESPONSE:

Efficient water use projects refer mainly to the automation of agricultural irrigation. The water used in agriculture represents 76.3% of the 85,664 million cubic meters that are reported as consumed in Mexico. The application efficiency of gravity or traditional irrigation (BAU scenario) is 60%, which means that during the application of irrigation almost half of the water is wasted, and therefore the amount of energy used for pumping….

The main variables that impact greenhouse gas emissions (GHG) are related to the energy consumption of the pumping equipment used in agricultural irrigation, directly related to the projects that will support the first emission of green bonds on efficient use of the water. This consumption has two factors: the efficiency of the pump, which refers to the energy consumption for each hour of work of the engine and the efficiency of irrigation application that is the water used and the number of hours required to irrigate one hectare. FIRA projects related to the efficient use of water, include technologies that reduce the number of pumping hours, due to a lower amount of water used and, therefore, the reduction of GHG emissions.

Scenario 1:
The automation of irrigation does not include the rehabilitation or replacement of pumping equipment. For each technical hectare, 15% of CO2 emissions are saved.

Calculation of savings of CO2 emissions by automation of irrigation, without rehabilitation or replacement of pumping equipment.						
Type of technology	Water consumption by technology[1]	Total energy by technology[3]	Total energy by technology	Coefficient of emissions	Total CO2 emissions per irrigated area	Mitigation per hectare
	M3/Ha/Cycle	Kwh/1000 m3	Kwh/ha	Non-dimensional	ton CO2/ha	ton CO2/ha
Baseline (BAU) - Traditional irrigation	7,500	561	4,205.08	0.58	2.45	
Localized irrigation[2]	5,000	716	3,582.10	0.58	2.08	0.3626
Total percent						15%

Source: FIRA, CONAGUA, CRE and information obtained directly with producer organizations (Irrigation Modules).

Considerations:

1/ The production of corn in the state of Sinaloa was taken as a base
2/ Includes drip irrigation and sprinkler irrigation.
3/ Considers the energy demand to apply irrigation.
The water consumption is considered BAU, irrigation by gravity, in taking of plot.
Parametric values were considered in water consumption by technology.

Scenario 2

The technologies include the rehabilitation of the well or the change of equipment, and the irrigation located at plot level, there is mitigation in emissions of up to 60%.

Calculation of savings of CO2 emissions by automation of irrigation, without rehabilitation or replacement of pumping equipment.						
Type of technology	Water consumption by technology[1]	Total energy by technology[3]	Total energy by technology	Coefficient of emissions	Total CO2 emissions per irrigated area	Mitigation per hectare
	M3/Ha/Cycle	Kwh/1000 m3	Kwh/ha	Non-dimensional	ton CO2/ha	ton CO2/ha
Baseline (BAU) - Traditional irrigation	7,500	561	4,205.08	0.58	2.45	
Localized irrigation[2]	5,000	334	1,670.00	0.58	0.97	1.48
Total percent						60%

Source: FIRA, CONAGUA, CRE and information obtained directly with producer organizations (Irrigation Modules).

Considerations:
1/ The production of Corn in the state of Sinaloa was taken as a base
2/ Includes drip irrigation and sprinkler irrigation.
3/ Considers the energy demand to apply irrigation.
The water consumption is considered BAU, irrigation by gravity, in taking of plot.

B. Adaptation Theme

SECTION 1: ALLOCATION

(To be completed for all water infrastructure assets)

Criteria	Evidence (E) Disclosure (D)	Max Score	Actual Score
1.1 Are there accountability mechanisms in place for the management of water allocation that are effective at a sub-basin and/or basin scale? *RESPONSE:* *Yes, there are mechanisms for the administration of national water concessions. In the National Law of National Waters (LAN), in its fourth Title, national waters; Chapter II, concessions and assignments, in general, allocations of water concessions for their use are legislated. Likewise, articles 30 to 32 establish the functions of the Public Registry of Water Rights, which is in charge of administering the concession titles, and all their modifications.*	D	1	1
1.2 Are the following factors taken into account in the definition of the available resource pool? **A. Non-consumptive uses (e.g., navigation, hydroelectricity)** **B. Environmental flow requirements** **C. Dry season minimum flow requirements** **D. Return flows (how much water should be returned to the resource pool, after use)** **E. Inter-annual and inter-seasonal variability** **F. Connectivity with other water bodies** **G. Climate change impacts** *RESPONSE:* *The state water programs (PHE), as well as the Water Atlas (AA) published by CONAGUA, consider the following:* *a. non-consumptive uses (power generation, at the basin level in the PHE)* *b. The environmental impacts of water at the national level (AA, section 4.8 conservation of nature and its services) are measured and "renewable water" (AA) is calculated.* *e. Water availability is monitored annually.* *g. An objective of the PHE is to assess the effects of climate change on the hydrological cycle and its effects on the environment (PHE).*	E	7	4

1.3 Is there a distinction between the allocation regimes used in "normal" times and in times of "extreme/severe" water shortage? *RESPONSE:* *Yes, in art. 13 Bis 4 of the LAN, it is considered that watershed councils should resolve possible temporary limitations on existing water rights to face extreme situations, including extreme scarcity and pollution and risks that compromise the sustainability of ecosystems. The councils determine droughts or scarcity problems based on measurements of the hydrometric network (measuring stations) (according to the PHE)*	E	1	1

1.4 What arrangements are in place, if any, to accommodate the potentially adverse impacts of climate change on the resource pool? (E.g. using best available science to plan for future changes in availability, undertaking periodic monitoring and updating of available pool.) *RESPONSE:* *Art. 38,39 and 41 of the LAN establish mechanisms to establish disaster zones, regulated zones, closed areas or water reserves in cases of overexploitation, emergencies, pollution, extraordinary droughts, among others, to guarantee the flows minimum for ecological protection, among others.* *In the PHE, projects are established that offer solutions to the problems found at the regional level.* *In the General Law on Climate Change, Title Four on National Climate Change Policy; Chapter II Adaptation, Art.28, establishes the validity of a National Adaptation Policy within the framework of the National System of Climate Change, where strategies are proposed, among others, for the management of water resources and agricultural activities.* *On the other hand, art. 30 contemplates, among others, the following:* *X. Prepare the diagnoses of damages in the water ecosystems, on the available volumes of water and their territorial distribution;* *XI. Promote the sustainable use of surface and underground water sources;* *XII. Promote the recharge of aquifers, the mechanization of the surface irrigation in the country, the production under conditions of practices of sustainable agriculture and sustainable practices of livestock, forestry, fishing and aquaculture; the development of resistant varieties, short cycle replacement crops and early warning systems on seasonal forecasts with precipitation or abnormal temperatures;* *XIII. Promote the collection of fees and the establishment of tariff systems for water uses that include payment for the hydrological environmental services provided by ecosystems in order to allocate them for their conservation*; *There is also a National Atlas of Vulnerability to Climate Change, which is a tool that shows territorial vulnerability, current and future, related to the climate to contribute to decision making in terms of adaption to climate change*	E	1	1
1.5 Are there plans to define "exceptional" circumstances, such as an extended drought, that influence the allocation regime? (E.g., triggers water use restrictions, reduction in allocations according to pre-defined priority uses, suspension of the regime plan, etc.) *RESPONSE:* *Art. 38,39 and 41 of the LAN establish mechanisms to establish disaster zones, regulated zones, closed areas or water reserves in cases of overexploitation, emergencies, pollution, extraordinary droughts, among others, to guarantee the flows minimum for ecological protection, among others.*	E	1	1

1.6 For international / transboundary basins, is there a legal mechanism in place to define and enforce water basin allocation agreements? **(answer may be NA)** *RESPONSE:* *Through the International Commissions on Boundaries and Waters between Mexico and Guatemala, Mexico-Belize, Mexico-United States, recommendations are made among governments to resolve bilateral boundary and water issues.* *The Treaty between the Government of the United Mexican States and the Government of the United States of America of the distribution of the international waters of the Colorado, Tijuana and Bravo rivers, from Fort Quitman, Texas, to the Gulf of Mexico determines the mechanisms of distribution in the northern inter-frontier basins. The treaty specifies that the United States of America must deliver annually to Mexico 1 850.2 million cubic meters. In turn, Mexico must supply what amounts to a minimum volume of 2 158.6 million cubic meters in the Rio Grande basin.*	D	1	1
1.7 Are water delivery agreements defined on the basis of actual in situ seasonal/annual availability instead of volumetric or otherwise inflexible mechanisms? *RESPONSE:* *Yes, the water concession stipulates that the delivery of the volume is not guaranteed, but that the availability of water is subject to climatic conditions. In agriculture, in the dry season, the extension and agricultural crops are adjusted downwards.* *On the other hand, agreements take volumetric information. In the case of the delivery of water to the USA, the treaty establishes two conditions:* *a) In cases of extraordinary drought or serious accident in the hydraulic systems of the Mexican tributaries, which make it difficult for Mexico to drain the 431.72 million cubic meters, the shortages that existed at the end of the five-year cycle, will be recovered in the next cycle with water from the same tributaries.* *b) In the event that the assigned capacity of the United States of America in the international dams shared by both countries (La Amistad and Falcon) with waters belonging to the United States is covered, a cycle of five years will be considered as completed and all volumes pending delivery fully covered, starting from that moment a new cycle.*	E	1	1

1.8 Has a formal environmental flows (e-flows)/sustainable diversion limit or other environmental allocation been defined for the relevant sub-basin or basin? *If preexisting,* has the environmental flows program been updated to account for the new project? *RESPONSE:* *For purposes of national water management, especially the publication of availability, CONAGUA has defined 731 hydrological basins. As of December 31, 2015, the availabilities of 731 hydrological basins had been published, in accordance with the NOM-011-CONAGUA-2000 standard, of which 627 were in a situation of availability (Superficial water availability: value resulting from the difference between the mean annual runoff volume of a basin downstream and the current annual volume committed downstream).* *For each one of the basins, renewable water is calculated (Water that is feasible to exploit in a sustainable manner in a region) and at the country level added in 2015: 446,777 hm3 per year.* *With regard to groundwater, the country is divided into 653 cuíferos. The denomination of the aquifers was published in the Official Gazette of the Federation (DOF) on December 5, 2001. The publication of the availabilities and their updates have been carried out since 2003 to date.* *In the Law, the definition of "environmental use or ecological conservation" (Art. 3 fraction LIV), as well as art. 29 Bis contemplates water use restrictions (deny the concession) when, among others, it affects the minimum ecological flow.*	E	1	1
1.9 Have designated environmental flows / allocation programs been assured / implemented? *RESPONSE:* *If in the calculation of the availabilities, the aforementioned rule in its definition 3.10. considers the "committed natural discharge" to the fraction of the natural discharge of an aquifer, which is committed as surface water for various uses or that must be conserved to prevent a negative environmental impact to the ecosystems or the migration of water of poor quality to an aquifer* *In addition, reforms were approved (pending publication) to the LAN, which contemplate guaranteeing the human right to water, as well as guaranteeing the flow of ecological flow (LAN project, articles 4 and 9)*	E or D	1	1
1.10 Has a mechanism been defined to update the environmental flows plan periodically (e.g., every 5 to 10 years) in order to account for changes in allocation, water timing, and water availability? *RESPONSE:* *Yes, the periodic publication of the availabilities according to NOM-011-CONAGUA-2000, considers those updates.* *Additionally, every six years, the State Water Programs are prepared, which describe the situation at the Basin level and refer to the National Water Program. An example of the Water Program of the State of Jalisco is attached.*	E	1	1

1.11 Is the amount of water available for consumptive use in the resource pool linked to a public planning document? (E.g., a river basin management plan) 1. **Yes, the limit is linked to a river basin management plan** *Yes, the consumptive use of water is determined and analyzed in the State Water Program in which the conditions that will prevail at the end of the planning horizon are analyzed. Result of these are determined the strategies and lines of action. The Basin Councils are collegiate bodies responsible for the planning, implementation and administration of water resources management actions by river basin or hydrological region.* 2. **Yes, the limit is linked to another planning document, please indicate:**	E	1	1
1.12 If present, is the river basin plan a statutory instrument that must be followed rather than a guiding document? *RESPONSE:* *The State and National Water Programs are linked to the National Development Plan, the governing document of the policies of the Mexican government and it is prepared every six years.*	D	1	1
TOTAL ALLOCATION SCORE		MAX = 18	15

SECTION 2: GOVERNANCE

Criteria	Evidence (E)/ Disclosure (D)	Max Score	Actual Score
2.1 Have water entitlements been defined according to one of the following? • **Purpose that water may be used for** • **Maximum area that may be irrigated** • **Maximum volume that may be taken in a nominated period** • **Proportion of any water** • **allocated to a defined resource pool** *RESPONSE:* *The National Waters Law (LAN), in its Article 31 of Title IV, establishes that requests for concession or assignment must document the volume of consumption required, the initial use that will be given to water, the quantity conditions and quality of the discharge of wastewater, location of the place of use, points of discharge and plans of the lands.*	D	1	1
2.2 Is the surface water system currently considered to be: ***A.*** ***Over-allocated*** **(e.g. current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used)** ***B.*** ***Over-used*** **(existing *abstractions* exceed the estimated proportion of the resource that can be taken on a sustainable basis)** ***C.*** **Neither over-allocated or over used** *RESPONSE:* A: Over allocated. According to Map 5.2 of the Atlas of Water in Mexico, it can be considered that the system is over-allocated. In spite of the 627 sources that still have potential for greater allocation, of the total of the 731 hydrological basins defined by CONAGUA, there are 349 superficial closures at a regional level. Superficial closure are those specific areas of the regions or hydrological basins in which no water use is authorized beyond those legally established and these are controlled by specific regulations.	E	1	1

2.3 If the investment uses groundwater, is the groundwater water system currently considered to be: **A. *Over-allocated* (e.g. current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used)** **B. *Over-used* (existing *abstractions* exceed the estimated proportion of the resource that can be taken on a sustainable basis)** **C. Neither over-allocated nor over-used** *RESPONSE:* A: Over-allocated Based on the Atlas of Water in Mexico 2016, as of December 31, 2015, of a total of 653 aquifers, there were a total of 146 decrees for the closure of groundwater, four regulations for aquifers, three regulated zones, and three declarations of Reserve areas for urban public use, which together cover approximately 55% of the national territory. They establish that, to extract, use and / or take advantage of groundwater within the territories defined in each of them, it is required to request the corresponding concession or allocation. The CONAGUA, considering the results of the studies it carries out, authorizes or rejects the concession or assignment, consequently, considering the proportion of the national territory subject to closure, regulation or reserve it is possible to determine that they are over-allocated. As of December 2015, there were 105 overexploited aquifers based on the extraction / recharge ratio.	E	1	1
2.4 Is there a limit to the proportion (e.g. percentage) of water that can be extracted? How might this need to change if water supplies become more variable due to climate change? (e.g. will having sufficient amounts to meet basic human needs take precedence over others?) *RESPONSE:* According to art. 22 of the LAN, the concessions and assignments issued by "the Water Authority", in the cases referred to in Fraction IX of Article 9 of the Law, will expressly state the conditions of the water source from which the respective extraction will be made, and that the extraction volume conditions will be subject to droughts and other phenomena. Likewise, concessions for water use stipulate the maximum amount of water allowed for their extraction and use. Art. 38, 39 and 41 of the LAN establish mechanisms to establish disaster zones, regulated zones, closed areas or water reserves in cases of overexploitation, emergencies, pollution, extraordinary droughts, and to guarantee the minimum flows for the ecological protection, among others. According to the Transitional Fifteenth article of the LAN, the hierarchy for water uses is as follows: Domestic, Urban Public, livestock, agricultural, aquaculture, ecological conservation, generation of public electric power, industrial, generation of private electric power, washing and land entanglement, tourism, multiple use, others.	E	1	1

2.5 Are governance arrangements in place for dealing with exceptional circumstances (such as drought, floods, or severe pollution events), especially around coordinated infrastructure operations? *RESPONSE:* Art. 38, 39 and 41 of the LAN establish mechanisms to establish disaster zones, regulated zones, closed areas or water reserves in cases of overexploitation, emergencies, pollution, extraordinary droughts, and to guarantee the minimum flows for the ecological protection, among others. With the creation of CONAGUA in 1989 and the promulgation of the National Waters Law in 1992, the transfer of Irrigation Districts (DR) to users began, supported by a program of partial rehabilitation of the infrastructure that has gone by concession in irrigation modules to user associations. By December 2015, more than 99% of the total area of the DRs had been transferred to users and only two districts had not been fully transferred to users.	D	1	1
2.6 Is there a process for re-evaluating recent decadal trends in seasonal precipitation and flow OR recharge regime, in order to evaluate "normal" baseline conditions? *RESPONSE:* Yes, according to LAN 13 BIS, basin councils will participate in the analysis of technical studies related to the availability and uses of water. Also, in art. 38 of the LAN indicates that the federal executive prior to the preparation of technical studies and considering the national hydrological and watershed programs, may decree the establishment of regulated, closed areas or declare the water reserve. Water planning in Mexico is organized at the national, regional and local levels. Every six years, State Water Programs are drawn up that describe the situation at the Basin level and refer to the National Water Program. An example of the Water Program of the State of Jalisco is attached.	D	1	1
2.7 Is there a formal process for dealing with new entrants? *RESPONSE:* RESPONSE: Yes, there are mechanisms for the administration of national water concessions. The National Water Law (LAN), in its fourth Title, national waters; Chapter II, concessions and assignments, in general, allocations of water concessions for their use are legislated. Likewise, articles 30 to 32 establish the functions of the Public Registry of Water Rights, which is in charge of administering the concession titles, and all their modifications.	D	1	1
2.8 For existing entitlements, is there a formal process for increasing, varying, or adjusted use(s)? *RESPONSE:* Yes, art. 23 of the LAN establishes the extraction of water can for no reason be increased or permanently modified without the issuance of the respective concession title being be processed.	D	1	1

2.9 Is there policy coherence across sectors (agriculture, energy, environment, urban) that affect water resources allocation, such as a regional, national, or basin-wide Integrated Water Resources Management (IWRM) plan? *RESPONSE:* Water planning in Mexico is organized at the national, regional and local levels. State Water Programs that describe the situation at basin level and refer to the National Water Program are prepared.	E	1	1
2.10 Are obligations for return flows and discharges specified and enforced? *RESPONSE:* Art. 21 of the LAN establishes that the discharge permit for waste water must be requested together with the concession for the use of national waters. NOM-001-SEMAR-NAT-1996, establishes requirements of maximum permissible limits in wastewater discharges in national waters and goods	D	1	1
2.11 Is there a mechanism to address impacts from users who are *not* required to hold a water entitlement but can still take water from the resource pool? *RESPONSE:* The LAN establishes in art. 17 the uses of free exploitation of water. However, all agricultural irrigation projects require a water concession according to Title four, national waters; chapter II, concessions and assignments of the LAN.	D	1	1
2.12 Is there a pre-defined set of priority uses within the resource pool? (E.g., according to or in addition to an allocation regime) *RESPONSE:* According to the Transitional fifteenth article of the LAN, the hierarchy for water uses is as follows: Domestic, Urban Public, livestock, agricultural, aquaculture, ecological conservation, generation of public electric power, industrial, generation of private electric power, washing and plotting of land, tourism, multiple use, other.	D	1	1

2.13 If there are new entrants and/if entitlement holders want to increase the volume of water they use in the resource pool, can new entitlements be issued or existing entitlements be augmented? **A. Yes, no restrictions** **B. No, catchment is closed** **C. Yes, if conditional on:** **1. Assessment of third party impacts** **2. Environmental impact assessment (EIA)** **3. Existing user(s) forgoing use** *RESPONSE:* C. Art. 23 of the LAN establishes that for no reason can an entitlement be increased or permanently modified, and that the extraction of water and the issuance of the respective concession title must be processed.	D	1	1
2.14 Are withdrawals monitored, with clear and legally robust sanctions? *RESPONSE:* Art. 86 of the LAN establishes that the water authority is in charge of the monitoring systems, as well as carrying out the systematic and permanent monitoring of the quality, quantity, uses and conservation of water. Art. 119 of the LAN, establishes which are activities are subject to sanctions or infractions and art. 120 of the LAN establishes infractions and administrative penalties.	E	1	1
2.15 Are there conflict resolution mechanisms in place? *RESPONSE:* According to art. 9 of the LAN, CONAGUA is responsible to, where appropriate, act at the request of users, as an arbitrator in the prevention, mitigation and resolution of conflicts related to water and its management.	E / D	1	1
TOTAL GOVERNANCE SCORE		Max= 15	15

SECTION 3: TECHNICAL DIAGNOSTICS

(To be completed for all water infrastructure assets)

Criteria	Evidence (E) / Disclosure (D)	Max Score	Actual Score
3.1 Does a water resources model of the proposed investment and ecosystem (or proposed modifications to existing investment and ecosystem) exist? *Specify model types, such as WEAP, SWAT, RIBASIM, USACE applications). Scale should be at least sub-basin.* *RESPONSE:* CONAGUA, and others such as IMTA and universities, has published at the national level several studies in which it considers water models, such as the Water Evaluation and Planning System (WEAP) and the Soil and Water Assessment Tool (SWAT). Two examples are attached: - Water evaluation in the San Juan river basin and aquifer of the san Juan Del Valle, through the WEAP (water evaluation and planning system). - Detailed program of integral management actions for the hydrological restoration of the Sonora River.	E	1	0
3.2 Can the system model the response of the managed water system to varied hydrologic inputs and varied climate conditions? *RESPONSE:* In some of the areas of intervention. If there are such models, as an example the document Evaluation of water in the San Juan river basin and San Juan river valley aquifer, through the WEAP (water evaluation and planning system, includes the use of the WEAP model and the detailed program of integrated management actions for the hydrological restoration of the Sonora River, the SWAT model.	E	1	0
3.3 Are environmental performance limits (ecosystem, species, ecological community) and/or ecosystem services specified? *RESPONSE:* Yes, several models, such as SWAT, are used for the valuation of ecosystem services.	E	1	1
3.4 Can these performance limits be defined and quantified using the water resources model? *RESPONSE:* Yes, the studies based on the models contemplate performance limits to establish a better distribution and allocation of water among the different uses (e.g. detailed program of integral management actions for the hydrological restoration of the Sonora River)	E	1	1

3.5 Have these limits been defined based on expert knowledge and/or scientific analysis? *RESPONSE:* Yes, the studies and their models are conducted based on science.	E	1	1
3.6 Are these performance limits linked to infrastructure operating parameters? *RESPONSE:* Yes, in cases where basins with water infrastructure are analyzed (eg with dams) they are included in the model.	E	1	1
3.7 Are these limits linked to an environmental flows regime? *RESPONSE:* No information available	E	1	0
3.8 For new projects, is there an ecological baseline evaluation describing the pre-impact state? *RESPONSE:* Yes, for projects that require a new water concession, an Environmental Impact Statement must be submitted, where the baseline is included (General Law of Ecological Equilibrium and Environmental Protection, Art. 28).	E	1	1
3.9 For rehabilitation / reoperation projects, is there an ecological baseline evaluation available before the projects was developed? *RESPONSE:* In the projects that are being included there is a baseline (BAU) for traditional irrigation, for example, in the corn projects in Sinaloa, 7,500 m3 / ha are applied and in drip irrigation 5,000 m3 / ha are applied.	E	1	1
3.10 Has there been an analysis that details impacts related to infrastructure construction and operation that has been provided? *RESPONSE:* Yes, for projects that require a new water concession, an Environmental Impact Statement must be submitted, which includes an analysis of the impacts (General Law of Ecological Equilibrium and Environmental Protection, Art. 28).	E	1	1
3.11 Are lost species and/or lost or modified ecosystem functions specified for restoration in the environmental evaluation? *RESPONSE:* Yes, for projects that require a new water concession, an Environmental Impact Statement must be submitted, which includes the proposal to mitigate impacts to species and ecosystem functions (General Law of Ecological Equilibrium and Environmental Protection, Art. 28). This proposal in the MIA must be specified in the corresponding Resolution.	E	1	1

3.12 Have regional protected areas / nature reserves been included in the analysis for impacts from the investment asset and future climate impacts? *RESPONSE:* Yes, for projects that require a new water concession, an Environmental Impact Statement must be submitted, which includes impacts on protected natural areas (General Law of Ecological Equilibrium and Protection of the Environment, Art. 28).	E	1	1
3.13 Does the model include analysis of regression relationships between climate parameters and flow conditions using time series of historical climate and streamflow data? *RESPONSE:* RESPONSE: The studies contemplate different methodologies that include the relationship between historical climatic parameters and water flow. Eg Detailed program of integrated management actions for the hydrological restoration of the Sonora River	E	1	1
3.14 Does the model include climate information from a multi-modal ensemble of climate projections (e.g., from the Climate Wizard or the World Bank's Climate Portal) to assess the likelihood of climate risks for the specified investment horizon(s)? *RESPONSE:* In general, the models include information on multimodal climate projections. (e.g. SWAT in the detailed program of integrated management actions for the hydrological restoration of the Sonora River.)	E	1	1
3.15 Are changes in the frequency and severity of rare weather events such as droughts and floods included? *RESPONSE:* Yes, for projects that require a new water concession, an Environmental Impact Statement must be submitted, which includes trends in the incidence of atypical weather events, among others.	E	1	1
3.16 Are sub-annual changes in precipitation seasonality included? *RESPONSE:* Projects that require a new water concession must submit an Environmental Impact Statement, which considers the seasonality of rainfall.	E	1	1
3.17 Is GCM climate data complemented with an analysis of glacial melt water and sea level rise risks, where appropriate (e.g., high or coastal elevation sites)? *RESPONSE:* Not applicable	E	1	1

3.18 Is paleo-climatic data (e.g., between 10,000 and >1000 years before present) included? *RESPONSE:* No information available	E	1	0
3.19 Is the number of model runs and duration of model runs disclosed? *RESPONSE:* No, there is no requirement to disclose this information	E	1	0
3.20 Has a sensitivity analysis been performed to understand how the asset performance and environmental impacts may evolve under shifting future flow conditions? *RESPONSE:* Yes, projects that require a new water concession must be submitted an Environmental Impact Statement, where future scenarios are considered.	E	1	1
3.21 Is directly measured climate data available for more than 30 years and incorporated into the water resources model? *RESPONSE:* Yes, the models use more than 30 years of data. (Detailed program of integral management actions for the hydrological restoration of the Sonora River).	E	1	1
3.22 Has evidence demonstrated that climate change has already had an impact on operations and environmental targets? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan. *RESPONSE:* Yes, the IPCC and the INECC have demonstrated the impacts of climate change, as well as future scenarios (the document "Effects of climate change in Mexico) is included. In the Special Climate Change Program of Mexico (included), these impacts and the adaptation plan are contemplated.	E	1	1
3.23 Does the evidence suggest that climate change will have an impact on operations and environmental targets over the operational lifespan? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan *RESPONSE:* The IPCC and INECC have demonstrated the impacts of climate change, as well as future scenarios (the document "Effects of climate change in Mexico) is included. In the Special Climate Change Program of Mexico (included), these impacts and the adaptation plan are contemplated.	E	1	1

3.24 Is there a discussion of the uncertainties associated with projected climate impacts on both operations and environmental impacts? *RESPONSE:* No information available	E	1	0
TOTAL DIAGNOSTIC SCORE		MAX= 24	18

SECTION *4: NATURE-BASED SOLUTIONS* ***(To be completed for nature-based-solutions and hybrid water infrastructure only)***
Entire section is not applicable

SECTION 5: ADAPTATION PLAN

Criteria	Evidence (E)/ Disclosure (D)	Max Score	Actual Score
AP 1. Is there a plan to restore or secure lost/modified ecosystem functions / species? *RESPONSE:* Yes, for new projects that require the submission of an Environmental Impact Statement, which includes the proposal to restore some impact to species and ecosystem functions (General Law of Ecological Equilibrium and Environmental Protection, Art. 28). This proposal in the MIA must be specified in the corresponding Resolution.	E	1	1
AP 2. Is the adaptation plan for environmental targets / infrastructure robust across specified *observed / recent* climate conditions? *Confer* Vulnerability Assessment (VA). *RESPONSE:* The Regulation of the General Law of Ecological Equilibrium and Environmental Protection (RLGEEPA), in articles 12 and 13, mandates that for the construction of the MIA, environmental forecasts and, where appropriate, evaluation of alternatives, the identification of the methodological instruments and technical elements that support the indicated information, as well as climatological and geographic vulnerability analysis.	E	1	1
AP 3. Is the adaptation plan for environmental targets / infrastructure robust across specified *projected* climate conditions? *Confer* VA. *RESPONSE:* The Regulation of the General Law of Ecological Equilibrium and Environmental Protection (RLGEEPA), in articles 12 and 13, mandates that for the construction of the MIA, environmental forecasts and, where appropriate, evaluation of alternatives, the identification of the methodological instruments and technical elements that support the indicated information, as well as climatological and geographic vulnerability analysis.	E	1	1

AP 4. Is there a monitoring plan designed to track ongoing progress and impacts to inform future decisions? *RESPONSE:* At the level of water use, CONAGUA is responsible for monitoring and monitoring compliance with the different environmental laws and regulations, with 4,999 **monitoring sites.**	E	1	1
AP 5. Is there a plan to reconsider on a periodic basis the VA for operational parameters, governance and allocation shifts, and environmental performance targets? *RESPONSE:* No information provided	E	1	0
TOTAL ADAPTATION PLAN SCORE		MAX= 5	4

Schedule 4: Mitigation Assessment for Evaluating the Issuer's Vulnerability Assessment & Adaptation Plan for Protected Agriculture Projects

Overview

To demonstrate compliance with the CBI Horticultural Greenhouse Criteria, it is the issuer's responsibility to provide the below information to prove compliance with each criteria of the *4.1 Mitigation Component*. The issuer is asked to provide confirmation under each of the mitigation criteria, and to provide supporting evidence wherever possible, except for criteria five, where specific policy evidence is requested. Sustainalytics will then provide an assessment on the information provided for each mitigation component criteria.

For the *4.2 Adaptation and Resilience Component*, the issuer is asked to provide confirmation under the adaptation and resilience criteria, and to provide supporting evidence wherever possible. Sustainalytics will then provide an assessment on the information provided.

For *4.3 Recommended Best Practice*, the issuer is encouraged to share this information at a project level as it demonstrates best practice to investors, this information will not be assessed by Sustainalytics or CBI, as it is for informational purposes only.

4.1 Mitigation Component

Mitigation Criteria	Evidence Provided[3]	Errors or Exceptions Identified
1. **Operations are shade houses or fully enclosed structures with permeable or non-permeable air envelope and designed for year-round production**	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (only if possible) Evidence is provided that confirms projects include 11 shade houses or 28 greenhouses with permeable or non-permeable air envelopes and designed for year-round production.	None
2. **Where heating is used, it is only for defense against cold in winter months.**	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (only if possible) It is confirmed that only projects in which heating is used less than 90 days per year (3 winter months) were selected. Evidence is provided in the summary of the characteristics of the projects in the portfolio. There are 28 greenhouse projects and 11 shade house projects that meet all the criteria.	None
3. **Only uses passive cooling; active ventilation is permitted only for managing heat and relative humidity.**	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (only if possible)	None

[3] Nominated projects and assets provided as evidence by FEFA on October the 4th 2018. The final list of projects and assets may vary according to credit portfolio fluctuations and final FEFA nomination consideration of individual projects.

	It is confirmed that only projects with low energy consumption were selected, thereby ensuring that they do not use active cooling systems. Evidence is provided in the summary of the characteristics of the projects in the portfolio. There are 28 greenhouse projects and 11 shade house projects that meet all the criteria.	
4. Where irrigation is used, it must be drip, micro-aspersion, or fertigation only, with monitoring.	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (only if possible) It is confirmed that only projects that use drip or micro-sprinkler irrigation with monitoring were selected. Evidence is provided in the summary of the characteristics of the projects in the portfolio. There are 28 greenhouse projects and 11 shade house projects that meet all the criteria.	None
5. Commitment to reuse or recycle used plastic sheeting and tubing, with a demonstrable policy or plan.	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (Required to disclose a policy or plan) It is confirmed that only projects that reuse or recycle plastics were selected. Likewise, in order to guarantee responsible disposal of plastics , only projects with at least one certification of good practices and for export markets were selected. Evidence is provided in the summary of the characteristics of the projects in the portfolio. There are 28 greenhouse projects and 11 shade house projects that meet all the criteria.	Exception, No specific policy or plan document was provided. However, through a review of the project portfolio list it has been determined that all of the projects either reuse, recycle or sell their used plastic sheeting to a third party. None of the projects discard plastic sheeting as waste.

4.2 Adaptation and Resilience Component

Adaptation and Resilience Criteria	**Evidence Provided[4]**	**Errors or Exceptions Identified**
1. No use of chemicals in the Stockholm Convention or 1a or 1b in the WHO classification of pesticides by hazard. Compliance with the Rotterdam Convention where relevant.	*CONFIRM:* (Yes/No) **YES** *EVIDENCE:* (only if possible)	None

[4] Nominated projects and assets provided as evidence by FEFA on October the 4th 2018. The final list of projects and assets may vary according to credit portfolio fluctuations and final FEFA nomination consideration of individual projects.

4.3 Recommended Best Practice

To demonstrate best practice, it is recommended that issuers disclose the following information for each project. This information is used to demonstrate best practice to investors only, CBI certification does not depend on the provision of this information.

The table below lists PA and shade house projects that meet the criteria established by CBI. Because of the issue of bank secrecy that the Law of Credit Institutions establishes in article 142, it is not possible to give the name of the company or person in charge of the project. It is confirmed that the 28 greenhouse projects are completely closed and produce in substrate, likewise, 5 projects have a system of recovery and reuse of water.[5]

Project Name	Sealed operations with non-permeable soil cover and integral (non-permeable air envelope? (Y/N)	Production in substrates? (Y/N)	Use water recovery and re-use systems? (Y/N)	Technology Type
1652001	Yes	Yes	Yes	Greenhouse
1643742	Yes	Yes	Yes	Greenhouse
1581583	Yes	Yes	No	Greenhouse
1667321	Yes	Yes	No	Greenhouse
1517794	Yes	Yes	No	Greenhouse
1582895	Yes	Yes	Yes	Greenhouse
1594534	Yes	Yes	No	Greenhouse
1645622	Yes	Yes	No	Greenhouse
1669264	Yes	Yes	No	Greenhouse
1669302	Yes	Yes	No	Greenhouse
1517325	Yes	Yes	Yes	Greenhouse
1522090	Yes	Yes	Yes	Greenhouse
1644766	Yes	Yes	No	Greenhouse
1657704	Yes	Yes	No	Greenhouse
1501378	Yes	Yes	No	Greenhouse
1523101	Yes	Yes	No	Greenhouse
1523493	Yes	Yes	No	Greenhouse
1630346	Yes	Yes	No	Greenhouse
1641716	Yes	Yes	No	Greenhouse
1578023	Yes	Yes	No	Greenhouse
1585902	Yes	Yes	No	Greenhouse
1597877	Yes	Yes	No	Greenhouse
1642908	Yes	Yes	No	Greenhouse
1643010	Yes	Yes	No	Greenhouse
1670940	Yes	Yes	No	Greenhouse
1684344	Yes	Yes	No	Greenhouse
1709446	Yes	Yes	No	Greenhouse
1696189	Yes	Yes	No	Greenhouse

[5] Nominated projects and assets provided by FEFA on October the 4th 2018. The final list may vary according to credit portfolio fluctuations and final FEFA nomination consideration of individual projects.

Project Name	Sealed operations with non-permeable soil cover and integral (non-permeable air envelope? (Y/N)	Production in substrates? (Y/N)	Use water recovery and re-use systems? (Y/N)	Technology Type
1533265	No	No	No	Shade house
1646152	No	No	No	Shade house
1649866	No	No	No	Shade house
1710588	No	No	No	Shade house
1709537	No	No	No	Shade house
1700118	No	No	Yes	Shade house
1514825	No	No	No	Shade house
1643010	No	No	No	Shade house
1670940	No	No	No	Shade house
1684344	No	No	No	Shade house
1709446	No	No	No	Shade house

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