



Reference number and submission name (assigned by the Secretariat):  
**SEM-23-002 (Avocado Production in Michoacan)**

## About this form

This form guides you on how to prepare a Submission on Enforcement Matters (SEM) under Article 24.27 of the new [USMCA/CUSMA](#) Trade Agreement, effective July 1, 2020. The SEM procedures are similar to the procedures contained in the North American Agreement for Environmental Cooperation (NAAEC), but there are some differences of which Submitters should be aware. The NAAEC procedures in Articles 14 and 15 no longer apply to new submissions filed on or after July 1, 2020.

To prepare your submission, **read carefully the [instructions](#)** on how to fill-out this form. Once completed, send it by email to [sem@cec.org](mailto:sem@cec.org) along with any attachments or links to download them.

You may also send your submission and attachments without using this form via email or to the following postal address:

CEC Secretariat, Legal Affairs and SEM  
700, rue de la Gauchetière, Bureau 1620  
Montreal, Quebec Canada H3B 5M2

## Submission Form Part I-Identification

**Important:** If your submission is incomplete, you will receive a determination according to Article 24.27(3) of the Agreement detailing the missing information, in which case, you will need to resubmit your submission. You may use this form again as well.

- I want my personal information to remain confidential.  
 You may disclose my personal information. If you are an individual, your email and postal addresses will not be made public.

Identification of the [Person of a Party](#) filing the submission.

**A. Submitter(s) (individual).** Fill this section if you are an individual. If you are an enterprise, use **section B**.

1. Last name:

[Redacted]

2. First name:

[Redacted]

3. Citizenship (or country of permanent residency):

Mexico

4. Address:

[Redacted]

5. Telephone:

[Redacted]

6. E-mail:

[Redacted]

**B. Submitter(s) (enterprise).** Fill this section if you are an enterprise of a Party, including a NGO.

7. Name of the entity:

8. Represented by:

9. Place of incorporation, date and/or registration number:

10. Address:

11. Telephone:

12. E-mail:

If there are more submitters, [click here](#) to download another Part I form.

## Part II-Representative(s)

If the Submitter(s) has no representative or no leading organization, please go to Part III.

| <b>C. Leading organization.</b> Fill below if the Submission is led by one or more organizations.   | <b>D. Representative of the Submitter(s).</b> Fill below if you have a legal representative   |
|---|---|
| <p>13. Name:</p> <p>14. Represented by:</p> <p>15. Place of Incorporation, date and or registration:</p> <p>16. Address:</p> <p>17. Telephone:</p> <p>18. E-mail:</p> | <p>19. Is the representative also one of the Submitters?<br/><input type="checkbox"/> Yes   <input type="checkbox"/> No</p> <p>20. Last name:</p> <p>21. First name:</p> <p>22. Citizenship (or country of permanent residency):</p> <p>23. Address:</p> <p>24. Telephone:</p> <p>25. E-mail:</p> |

If there is more than one leading organization, [click here](#) to download Part II of this form.

## Part III-Your Submission

**E. Party of Concern.** Please identify the location of the issues and environmental laws raised in your submission. Your submission could address more than one party and its environmental laws.

26. To which Party(s) are you addressing your submission?

Canada.

Mexico.

United States.

## F. Environmental law.

27. The Submitter must identify the applicable provision of the statute or regulation, as defined in [Article 24.1](#) of the Agreement. Prepare a numbered list of the statute(s) or regulation(s) and include the applicable provisions.

There is a failure to effectively enforce various environmental laws:

There is a direct failure to enforce Articles 93, 94, 96, 97, 98 and 99 of the General Sustainable Forestry Development Act (*Ley General de Desarrollo Forestal Sustentable—LGDFS*).

This, in turn, leads to the failure to enforce other environmental laws in effect, such as:

Articles 5 sec. II, IX, IX, 15 sec. III, IV, IX, XII, XVII, 19, 20 BIS 1, 21, 78, 79, 88, 89, 98, 99, 100, 159 BIS and related articles of the General Ecological Balance and Environmental Protection Act (*Ley General del Equilibrio Ecológico y la Protección al Ambiente—LGEEPA*);

Articles 7 BIS sec. XI, 9 sec. XVI, XXXVI, 14 BIS 5 sec. IX, X, XI, XII, XVI, XVII, 16, 29, 21, 25, 28, 29, 48-54, 64, 119, 120 and related articles of the National Water Act (*Ley de Aguas Nacionales—LAN*);

Articles 1, 2, 4, 5 sec. V, 12, 13, 164-177 and related articles of the Sustainable Rural Development Act (*Ley de Desarrollo Rural Sustentable—LDRS*);

Articles 7 sec. VI subsection a), XXII and XXV, 26 sec. I, III, IV, VIII, IX, XI, XIII and related articles of the General Climate Change Act (*Ley General de Cambio Climático—LGCC*);

Articles 1, 4, 5, 6, 9, 18, 19, 20, 70, 106, 107 and related articles of the General Wildlife Act (*Ley General de Vida Silvestre—LGVS*);

The aforesaid failures violate the principles established in Article 4 of the Political Constitution of the United Mexican States.

GENERAL SUSTAINABLE FORESTRY DEVELOPMENT ACT <https://www.diputados.gob.mx/LeyesBiblio/pdf/LGDFS.pdf>

GENERAL ECOLOGICAL BALANCE AND ENVIRONMENTAL PROTECTION ACT

<https://biblioteca.semarnat.gob.mx/janium/Documentos/Ciga/agenda/DOFsr/148.pdf>

NATIONAL WATER ACT <https://www.diputados.gob.mx/LeyesBiblio/pdf/LAN.pdf>

SUSTAINABLE RURAL DEVELOPMENT ACT [https://www.diputados.gob.mx/LeyesBiblio/pdf/235\\_030621.pdf](https://www.diputados.gob.mx/LeyesBiblio/pdf/235_030621.pdf)

GENERAL CLIMATE CHANGE ACT <https://www.diputados.gob.mx/LeyesBiblio/pdf/LGCC.pdf>

GENERAL WILDLIFE ACT [https://www.diputados.gob.mx/LeyesBiblio/pdf/146\\_200521.pdf](https://www.diputados.gob.mx/LeyesBiblio/pdf/146_200521.pdf)

POLITICAL CONSTITUTION OF THE UNITED MEXICAN STATES <https://www.diputados.gob.mx/LeyesBiblio/pdf/CPEUM.pdf>



## G. Statement of facts.

28. Make sure that you make reference to the elements listed in this [checklist](#).

Please ensure that the information you enter in this section does **not exceed the 15-page limit**. Review your text accordingly. Use the space below to include a succinct account of facts. Please number each paragraph for ease of reference. You may use hyperlinks to reference supporting information.

### STATEMENT OF FACTS

PARAGRAPH 1. Avocado production in Michoacán has shown notable growth in recent decades. Since opening the border with the United States of America in 1997, Michoacán has positioned itself as the main producer and exporter, not only in Mexico, but worldwide.<sup>1</sup> Today, avocado growing in Michoacán is a world-class industry. Every year, the number tons exported, primarily to the United States, breaks records. This has led to a very dynamic economy for the region and for the state,<sup>2</sup> creating jobs and fostering countless associated economic activities.<sup>3</sup>

PARAGRAPH 2. However, avocado production in Michoacán (and certainly elsewhere in Mexico)—from an environmental standpoint—is practically informal. That is, while there is scarce environmental regulation, these few regulations are not enforced. MEXICO IS ENGAGING IN A SERIOUS FAILURE TO EFFECTIVELY ENFORCE ENVIRONMENTAL LAWS, such as in the case of Articles 93 to 99 of the General Sustainable Forestry Development Act (LGDFS), and other environmental laws accordingly, as indicated below.

PARAGRAPH 3. Certain legislative actions have been attempted, along with legal and administrative mechanisms at the local level, which have been fruitless. This is not just because of the issue of competent jurisdiction (forestry is a federal jurisdiction), but also because the actions have not been adequately proposed nor followed through. It should also be noted that there are no effective coordination mechanisms between the state and federal authorities, as evidenced by several responses to the information requests made to such effect, as discussed in paragraph 33. Thus, the current situation of avocado production in Michoacán and the environmental impacts caused therefrom falls under the recently defined concept of ECOCIDE, developed by an international panel of experts: "*Ecocide*" means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts. (Ecocide, 2023)

PARAGRAPH 4. This is not a sustainable situation. Environmental damage and climate change are quickly worsening, to the detriment of nature and human health. Thus there are growing concerns and environmental protection efforts at an international level, including the UN General Assembly's recent recognition, in July 2022, of the human right to a clean, healthy and sustainable environment. This is fully consistent with the provisions of Chapter 24 of the USMCA, establishing a series of environmental principles to be observed.

PARAGRAPH 5. The area devoted to avocado growing in Michoacán has seen accelerated growth, basically at the expense of woodlands. This considers the areas currently recognized for export purposes (more than 181,919 ha, according to the Ministry of Agriculture, paragraph 45 and Exhibit 3), and those not yet recognized as being for export, in addition to those that continue to be planted day to day and year to year, as a result of the "green gold fever". Figure 1 shows a very moderate trend, while the reality may be much worse. Unfortunately, reliable official data do not exist, as the data found are contradictory as discussed below.

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<sup>1</sup> In 2021, Michoacán produced 1.83 million tons of avocado, accounting for 75% of nationwide output. See <https://www.elfinanciero.com.mx/nacional/2022/02/17/de-mexico-para-el-mundo-estos-son-los-otros-aguacateros-del-pais-a-parte-de-michoacan/>

<sup>2</sup> It is estimated that in 2021, the avocado industry represented 3.85 billion dollars for Mexico, representing the second most important export product, bringing more than 2 billion dollars into Michoacán. See <https://www.jornada.com.mx/notas/2022/02/14/politica/peligra-exportacion-de-mas-de-2-mil-500-mdd-en-aguacate/>

<sup>3</sup> The Mexican Association of Avocado Growers and Packers (*Asociación de Productores and Empacadores de Aguacate de México—APEAM*) estimates that industry generates 78,000 direct jobs and more than 300,000 indirect jobs. <http://www.apeamac.com/>

Figure 1  
Avocado-producing area in Michoacán

| YEAR  | AREA [ha] |
|-------|-----------|
| 1960s | 15,000    |
| 1970s | 23,000    |
| 1980s | 35,000    |
| 2000  | 55,000    |
| 2006  | 83,000    |
| 2017  | 148,000   |
| 2021  | 300,000   |

Source: Prepared with information from Garibay and Bocco (2011); Álvarez, et al. (2017); and APEAM (2022) and other sources. PARAGRAPH 6. APEAM was founded in 1997, when the US market opened, to give an organized approach to avocado production for export.<sup>4</sup> This approach has driven avocado production and avocado marketing to historic records every year. Unfortunately, at the same time, it has also driven rates of deforestation and negative environmental impacts in several areas in Michoacán.

PARAGRAPH 7. In September 2021, APEAM's website listed a membership of 29,000 producers, 65 packers, and 962,000 tons exported to the United States in the 2019–2020 season.<sup>5</sup> For December 2022, figures increased to 32,315 producers and 81 packers. This is very significant growth, pointing to "green gold fever" and implies or implied 150,000 hectares and 43 municipalities recognized as part of the avocado growing zone, compared to the 22 municipalities included in the zone in 2017.<sup>6</sup> Avocado producers not associated with APEAM (for the time being) are estimated to plant a similar or greater area, and the avocado growing area in Michoacán in 2022 could easily reach 300,000 hectares.<sup>7</sup> These data are changing, as every day more and more lands are being sought to plant avocado, at the expense of woodlands and directly affecting the environment.

PARAGRAPH 8. It should be noted that Michoacán avocado growers, and how they build and operate their production units, are not all the same (Burgos, Anaya and Solorio, 2011, Gavito et al. 2012). Growers do not work in the same economic, ecological or social conditions; rather, there are evident differences with respect to their interests, means, the environmental features of their immediate surroundings, the framework of the social relationships in which they work, and their reactions to technological proposals, among other circumstances (Burgos, Anaya and Solorio, 2011).

PARAGRAPH 9. A Producer Profile, made up of 10 types (groups) and segmented by the potential ecological impact of their form of management, shows that types I to III involve low- and medium-impact forms of production (12%); types IV to VII (25%) have low-high to high impact; and types VIII to X have very high impacts (63%) (Burgos, Anaya and Solorio 2011). In other words, most avocado producers in Michoacán are generating either high or very high impacts according to several specific indices, with a high impact in the General Potential Ecological Impact (*Índice General de Impacto Ecológico Potencial—IGIEP*) accordingly.<sup>8</sup>

PARAGRAPH 10. The description of the environmental problems caused by avocado production in Michoacán in the following paragraphs is based on two core assertions: 1) Woodlands and their ecosystems produce environmental services; and 2) Woodlands and their ecosystems are public goods tightly linked to other public goods. Environmental services are defined as indirect services obtained by society from the ecosystems at no cost (Wunder et al. 2007).

PARAGRAPH 11. As it is widely known, some of the environmental services provided by woodlands are: Protection of biodiversity, wildlife refuges, habitat for various organisms, recreation, mitigation of the effects of climate change, climate regulation due to the interaction of vegetation with the atmosphere, regulation of the hydrological cycle due to the ecosystem's ability to intercept rainwater, filter water, recharge aquifers and slowly release water volumes, soil conservation, assimilation of various pollutants, carbon capture through the photosynthesis process and oxygen generation, among others (Chávez-León et al. 2012, Bravo et al. 2014).

PARAGRAPH 12. The Organisation for Economic Co-operation and Development (OECD) has identified the public goods and environmental externalities derived from farming activities:

<sup>4</sup> See <http://www.apeamac.com/>

<sup>5</sup> Export figures practically tripled in the decade from 2010 to 2020. For further detail, see <https://thelogisticsworld.com/comercio-internacional/exportaciones-del-aguacate-mexicano-se-preparan-para-el-super-bowl-iv-logran-cifras-record/>

<sup>6</sup> Radio interview by Jaime López Martínez with APEAM Director Armando López Orduña, on 103.3 FM at 2:06 pm on September 2, 2021.

<sup>7</sup> The APEAM website states that, in 2021, one million hectares were reached in an area of 144,000 hectares [sic]. Avocado production in Mexico is estimated at 1,831,622 tons, according to the Farm, Food and Fisheries Information System (*Servicio de Información Agroalimentaria y Pesquera—SIAP*). From there, it can be inferred that avocado producers not belonging to APEAM can represent a similar amount, with the area amounting to nearly 300,000 hectares. It is very likely that all of them and even more will want to be part of APEAM and export very soon.

<sup>8</sup> This is based on sample data, which according to scientific parameters may be representative of the whole.

"Agriculture is a provider of commodities such as food, feed, fiber and fuel, and it can also bring both positive and negative impacts on the environment, such as biodiversity, water and soil quality. These environmental externalities from agricultural activities may have characteristics of non-rivalry and non-excludability. When they have these characteristics, they are defined as agri-environmental public goods. Agri-environmental public goods need not necessarily be desirable; that is, they may cause harm and can be defined as agri-environmental public bads. [Pannell, D. and A. Roberts (2015)]<sup>9</sup>

PARAGRAPH 13. The OECD (2015) refers to nine agri-environmental public goods (or bads): 1) Soil quality and protection; 2) Water quality; 3) Water quantity and availability; 4) Air quality; 5) Climate change - carbon storage; 6) Climate change - greenhouse gas emissions; 7) Biodiversity; 8) Agricultural landscapes; and 9) Resilience to natural disasters.

PARAGRAPH 14. In the particular case of Michoacán avocado farming, there are studies that show the environmental externalities being generated over several years (Exhibit 1, REFERENCES). This is nothing new and has been pointed out by various researchers, including official sources (Barsimantov and Navia, 2012; Burgos, Anaya and Solorio, 2011; Chávez-León, et al., 2012; CEDRSSA, 2017; Vidal et al., 2014 and others).<sup>10</sup>

PARAGRAPH 15. Researchers at the National Autonomous University of Mexico (*Universidad Nacional Autónoma de México*—UNAM) hold that deforestation rates in Michoacán in favor of planting avocados are among the highest in Mexico and Latin America (Bocco, Mendoza and Masera 2001).

PARAGRAPH 16. Garibay and Bocco (2011) have studied the change in forested land use on the Purépecha plateau and found that during the period studied, between 1976 and 2005, municipalities in the Purépecha region lost between 25 and 35 percent of their woodland areas. This figure is alarming, since various specialists state that the rate of deforestation and growth in the avocado region has subsequently increased, from 2005 to 2021, which can lead to very alarming figures due to the lack of adequate regulation, public policies, and environmental protection and preservation actions (Bocco, Mendoza and Masera 2001; Mas, Lemoine-Rodríguez et al. 2017; Cho 2020).<sup>11</sup>

PARAGRAPH 17. Considering the scientific studies, articles in journalist investigations, and the growth in the increased avocado planting area in recent years due to the green gold "boom", current annual deforestation is estimated to be 30,000 hectares. It should be noted, however, that Michoacán's environmental authorities have recently stated that deforestation may reach 60,000 hectares *per year*.<sup>12</sup> Unfortunately, there is no published official information.<sup>13</sup>

PARAGRAPH 18. The deforestation associated with avocado growing and the monocrop's low CO<sub>2</sub> capture capacity affects climate change (Álvarez et al. 2017).<sup>14</sup> Based on Madrigal (1995) and Kerckhoffs and Reid (2007), Chávez León et al. (2012) state that while avocados can capture between 37 and 55 tons of CO<sub>2</sub> per hectare, Michoacán's *Pinus douglasiana* woodlands capture 222 t/ha.

PARAGRAPH 19. A 2009 study on the indiscriminate use of pesticides in Michoacán's avocado region identified the application of 450,000 liters of insecticides, 900,000 tons of fungicides, and 30,000 tons of fertilizers per year, which has led to water pollution, among other things (Bravo et al. 2009). Considering the growth in the avocado planting area described in Figure 1 of paragraph 5 above, these figures can easily be multiplied three-fold.

PARAGRAPH 20. Burgos, Anaya and Cuevas (2012) found that pollution from the use of agrochemicals can be one of the main ecological problems in the management of avocado fields, since 69% of the producers in their study had high and very high impact levels in the Agrochemical Usage Pollution Index (*Índice de Contaminación Por el Uso de Agroquímicos*—CPUA).

PARAGRAPH 21. The overuse of chemicals, fertilizers and pesticides affects water tables and pollutes the rivers and streams in the avocado region. These effluents then affect the land, communities and people several kilometers downstream.

PARAGRAPH 22. Burgos, Anaya and Solorio (2011), in measuring the Potential Water Consumption Index in the Michoacán avocado region, state that they found between 20% and 140% overuse of water, significantly above the groves' requirements. This situation causes a significant reduction of water volumes and sources of supply, in turn affecting the environment and people in various communities.

PARAGRAPH 23. Water is closely connected with forests. Increasing deforestation affects the quantity and availability of water,

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<sup>9</sup> Pannell, D. and A. Roberts, 2015, "Public goods and externalities: Agri-environmental Policy Measures in Australia", OECD Food, Agriculture and Fisheries Papers, No. 80 <<https://doi.org/10.1787/5js08hx1btlw-en>>.

<sup>10</sup> With a similar perspective, Cho (2020, p. 7) states: "*Michoacán avocado exports increased sixty-fold between the years 2000 and 2018 (United Nations Statistical Division, 2019) pitting pressure on the environment and people of Michoacán. One pressing environmental challenge associated with growing avocado production is deforestation.*"

<sup>11</sup> Cho (2020), based on *Global Forest Change* data, holds that Michoacán saw an estimated deforestation of around 90,000 hectares in the 2001-2017 period, noting that the rate of deforestation has trended upward in recent years.

<sup>12</sup> <https://www.lavozdemichoacan.com.mx/michoacan/medio-ambiente/sin-freno-degradacion-ambiental-en-michoacan-se-pierden-60-mil-hectareas-al-ano-por-huertas-ilegales/>

<sup>13</sup> There is no sign of the so-called State Forestry Information System or the State Forest and Soil Inventory, to which the Michoacán State Forestry Act refers. See the website of the Michoacán State Forestry Commission: <https://cofom.michoacan.gob.mx/>

<sup>14</sup> This will have an adverse effect on avocado growing, threatening its sustainability.

as forests capture, regulate and maintain water flow and quality. Forest cover helps regulate eco-hydrological cycles and other processes related to water, such as biodiversity, run-off (erosion), flooding, regional precipitation and climate change.

PARAGRAPH 24. "Forests have an essential role in the production and protection of water, although the expansion of avocado growing is beginning to impact this ecosystem service, reflecting a trend toward decreased water volume in springs at the Barranca del Cupatitzio and Pico de Tancítaro National Parks. In the medium and long term, this impact may be critical, as more than 85% of the springs' water is intended to supply drinking water in urban centers." Bravo et al. (2009, p. 32)

PARAGRAPH 25. The topic of water is serious and unfortunately is a poorly documented issue. To sustain the avocado groves, water tank storage use has proliferated beyond all rules or control by the authorities.<sup>15</sup> Sources from the National Water Commission (*Comisión Nacional del Agua*—Conagua) state, off the record, that more than 50% of wells at avocado groves are illegal. This will lead to increasingly evident social conflicts over water, as avocado producers redirect water flows away from communities' basic needs.<sup>16</sup>

PARAGRAPH 26. One of the direct effects of deforestation and monoculture cultivation, such as the avocado, is the loss of biodiversity.<sup>17</sup> Burgos, Anaya and Solorio (2011), based on a broad field study in Michoacán, found that 66% of avocado producers do not conserve native forest species and that 93% use synthetic pesticides. Both facts point to a very high potential impact on the loss of biodiversity.<sup>18</sup>

PARAGRAPH 27. UNAM researchers estimate that there are seven species of pine that are in danger of disappearance due to the effects of avocado production in the territory of Michoacán, which will have a considerable effect on biodiversity.<sup>19</sup> They state that, "the seven species native to the avocado region present an imminent risk of disappearance from the ecosystems neighboring the avocado area. This will get worse due to climate change, which will lead avocado producers to find cooler areas, which are currently occupied by forest species" (Bravo et al. 2009, p. 69).

PARAGRAPH 28. In this same sense, an official study by the Chamber of Deputies states that the avocado's success has paradoxically become a threat to Michoacán's forests, where some of the country's most important woodland reserves are found (CEDRSSA 2017).

PARAGRAPH 29. Most of the scientific studies reviewed acknowledge that there are still issues to be investigated in greater depth so that we understand all environmental impacts being caused by avocado production in Michoacán.

PARAGRAPH 30. This is especially relevant because official environmental information relevant to many of the issues addressed here is nonexistent and even in the best cases, incomplete and out of date.<sup>20</sup> It is very possible that we are only starting to see the tip of the iceberg, with environmental effects below that are much greater than have been documented or even imagined.

PARAGRAPH 31. In this sense, the precautionary principle—that is, [acting with] urgency to adopt measures to reduce, contain and remediate environmental damage—becomes relevant. The precautionary principle, widely recognized internationally in several treaties, states that "when there is a threat of serious or irreversible environmental damage [as with the introduction of a new crop that requires substantial change to the land and land cover that it will displace], the lack of full scientific certainty should not be used as a reason for postponing the adoption of cost-effective measures to prevent degradation to the environment." (Rio Declaration, 1992, Principle 15; Artigas 2001; Cafferata 2004).<sup>21</sup>

PARAGRAPH 32. Avocado production in Michoacán is surrounded by institutional and regulatory weakness, leading to informality (Ohnsorge 2021) that in this case may be referred to as "environmental informality," which has left the avocado sector virtually in an anarchical state.<sup>22</sup>

PARAGRAPH 33. There is no record of administrative coordination or the building of a joint public policy by federal authorities such as the Ministry of Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*—Semarnat), the Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa) and the Ministry of Agriculture (*Secretaría de Agricultura*), with the government of Michoacán (answer to question 1, Exhibit 4 [sic];

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<sup>15</sup> <https://www.lavozdemichoacan.com.mx/morelia/urgen-a-regular-procedimientos-para-las-hoyas-de-agua-en-michoacan/>

<sup>16</sup> <https://www.lavozdemichoacan.com.mx/michoacan/el-de-yoricostio-no-es-el-unico-caso-la-disputa-por-el-agua-se-extiende-a-mas-municipios/>

<sup>17</sup> The Cho study (2020) confirms that the avocado expansion implies serious threats to biodiversity, including the monarch butterfly, which is an important symbol for Michoacán and the world.

<sup>18</sup> See also Burgos, Anaya and Cuevas (2012).

<sup>19</sup> The species are *Pinus oocarpa*, *P. douglasiana*, *P. leiophylla*, *P. michoacana* Var. *Martínez*, *P. michoacana* Var. *cornuta*, *P. pseudostrobus* and *P. montezumae*.

<sup>20</sup> This is evidenced by a review of the websites of the Michoacán environmental agencies, the State Forestry Information System, and the National Environmental and Natural Resources Information System.

<sup>21</sup> Item 15 of the Rio Declaration approved by the United Nations Conference on Environment and Development in June 1992 set forth the Precautionary Principle. Thereafter, it has been incorporated into numerous treaties and international declarations.

<sup>22</sup> In the case of the avocado, it could be argued that producers and enterprises share their own characteristics with informal activities, identified as "avoiders" and "outsiders" (Ohnsorge 2021, p. 49)



answer to question 5, Exhibit 5; Exhibit 6; and other evidence).<sup>23</sup>

PARAGRAPH 34. This is not a new issue. Analyzing the impact of avocado groves on forested land use, an official federal government study from several years ago by the National Institute of Forestry, Farming and Stockbreeding Research (*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias*) under the Ministry of Agriculture, showed that the enforcement of the laws and regulations governing changes in land use is unfortunately hindered by the little or no coordination among the responsible federal agencies. "It is necessary for the Government to respect the rule of law to impose legal order and obtain the results proposed with laws, policies, investments, rules and tax incentives" (Chávez-León et al. 2012, p. 23).

PARAGRAPH 35. Environmental impacts caused by the failure to effectively enforce the environmental laws under which the avocado is currently produced in Michoacán violate the human right to a healthy environment, set forth in Article 4 of the Political Constitution of the United Mexican States, as well as the recent rulings of the Inter-American Court of Human Rights on the 2020 case OC 23/2017, *Lhaka Honhat v. Argentina*.

PARAGRAPH 36. The environmental damage caused by the avocado in Michoacán, due to inadequate and unenforced regulation, violates the resolution of the United Nations Human Rights Council, which, since October 2021, has recognized the human right to a clean, healthy and sustainable environment (UN 2021), as well as the resolution of the UN General Assembly that recognizes access to a clean, healthy and sustainable environment as a universal human right (UN 2022).

PARAGRAPH 37. For more than 20 years and at present, there is a serious failure to effectively enforce Article 93 of the LGDFS, which provides: "The Ministry may only authorize the change of land use for forest lands on an exceptional basis, with the prior technical opinion of the members of the respective State Forestry Council and based on technical justification studies whose contents shall be prescribed by Regulation, demonstrating that the biodiversity of the ecosystems to be affected will be maintained and that the soil erosion, carbon storage capacity, water quality impairment or reduced capture is mitigated in the areas affected by the removal of the forest vegetation..." In this regard, in the period from 2000 to 2020, "*Semarnat, through its Office of Representation in the state of Michoacán, has not granted any authorization to change land use from forestry to farming in a period of more than 20 years as of this date*" (response to information request, Ruling No. Semarnat/UCVSDHT/UT/1143/2022, dated 23 November 2022 (Exhibit 2)). On the contrary, SIAP data on avocado production, the planted area and exports and many other sources show an obvious, overwhelming growth.

PARAGRAPH 38. Therefore, considering that in 2000 there were only 50,000 hectares of avocado planted, and as of 2023 there may be more than 300,000 (see figure in paragraph 5), it is easy to determine that around 80% or 90% of groves are illegal.<sup>24</sup>

PARAGRAPH 39. The authority does not comply with Article 97 of the LGDFS, which provides: "No authorization to change land use may be granted for forest lands where the loss of forest cover was caused by fire, logging or cutting, unless 20 years have passed and it is evidenced to the Ministry that the affected forest vegetation has regenerated, through the mechanisms established for such purpose in the Regulations to this Act."

PARAGRAPH 40. With respect to the preceding paragraph, the response to the information access request included as Exhibit 4 shows that the agency responsible for protecting forests and all related matters is the National Forestry Commission (*Comisión Nacional Forestal—Conafor*) under Semarnat, which in Ruling 330009622000324, dated 1 September 2022, states that it does not have mechanisms to prevent fire-stricken forest areas to be engaged in farming activities. It further states, in answer to question 3, that Conafor has not performed any action to comply with Article 99 of the LGDFS, due to a lack of support. Moreover, it acknowledges in the answer to questions 5 and 7 that it has not done any fire reporting in the 2010–2022 period with the Ministry of Agriculture in order to apply Article 99 of the LGDFS. This demonstrates the official irresponsibility and clear violation of Article 97 and others of the LGDFS, as it clearly shows that there are no official mechanisms of any kind to enforce the environmental law.

PARAGRAPH 41. In the response to information access request 330009622000323, dated 19 September 2022 (Exhibit 5), Conafor acknowledges, in the answer to question 5, that it does not have information to determine the current state of the land where forest fires were reported during the 2002–2022 period, confirming the trend observed in the preceding paragraph.

PARAGRAPH 42. In the same document referred to in the preceding paragraph, Conafor states that the National Forest Registry (*Registro Forestal Nacional*) does not have any forest fire records for Michoacán for the 2000–2022 period, as it is not within Semarnat's jurisdiction pursuant to Article 42 of the LGDFS. However, it should be noted that Articles 28 and 29 of the LGDFS Regulations provide that the National Forestry Monitoring Service (*Sistema Nacional de Monitoreo Forestal*) is the forestry policy instrument that generates timely, coherent and consistent information on the state of woodland vegetation, forest ecosystems and the biodiversity, deforestation or degradation thereof. For this purpose, Conafor shall determine the methodologies and procedures, criteria and indicators to generate, analyze and release information. There is clearly an inconsistency that points to the ominous

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<sup>23</sup> The 25 February 2020 response from the Michoacán State Forestry Commission (*Comisión Forestal del Estado de Michoacán—COFOM*) to an information access request (in our possession) states that there is no collaboration agreement between the federal government and Michoacán to combat land use changes.

<sup>24</sup> This is inferred, considering that in 2000 there were only 50,000 hectares of avocado, of the more than 300,000 that may exist today.

irresponsibility of the official bureaucracy, and of course the failure to effectively enforce the environmental laws.

PARAGRAPH 43. Therefore, it can be said that, in contravention of Article 97 of the LGDFS, which provides that a land use change cannot be granted for forests that have undergone fires during the following 20 years, in reality there is a dual dimension in Michoacán: on the one hand, the authorities acknowledge that there is no record (much less a georeferenced record) of the lands that have sustained fires, or a follow-up of the activities or use of the land thereafter, and on the other hand, the authorities further recognize that there is no communication among federal agencies and thus no instruments to prevent fire-stricken or logged lands from subsequently being used for farming, such as in the present case (Exhibit 4, Exhibit 5 and Exhibit 6). Forest fires have been very frequent in Michoacán in recent years, and curiously nearly all of these lands are used as avocado groves the following year. Again, this evidences a serious failure to effectively enforce the environmental laws.

PARAGRAPH 44. The authority fails to comply with Article 99 of the LGDFS which provides: "The Ministry, with the participation of the Commission, will coordinate the land-use policy with the Ministry of Agriculture and Rural Development, to stabilize farming use, develop sustainable practices and prevent farm production from growing at the expense of forestry lands. The various federal, state and municipal authorities shall not grant economic support or incentives for activities on lands whose change in soil use has not been authorized by the Ministry."

PARAGRAPH 45. The federal authority fails to comply with Article 99 of the LGDFS as aforesaid. The Ministry of Agriculture, through the National Food and Agriculture Health, Safety and Quality Service (*Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria*—Senasica) is in fact granting support by issuing a certificate to enable avocado producers to export, namely the International Phytosanitary Certificate (*Certificado Fitosanitario Internacional*—CFI), which does not in fact contain any environmental considerations and is issued to applications without reviewing or investigating the history of the land or whether there is any authorization to change soil use (Senasica Ruling B00.01.01.-07849/2022, dated 25 August 2022 (Exhibit 3). Note that from a public policy perspective, "support" refers not only to direct economic or financial support, but rather in this case refers to support in-kind (a certificate), which is an indispensable instrument for export. Thus, issuing a certificate is providing support.

PARAGRAPH 46. In the same document (Exhibit 3), the authority shows that: A) The annual number of authorizations for packers grew from 37 in 2010 to 72 in 2022 (nearly double); B) the number of CFIs grew from 14,181 in 2010 to 63,559 in 2021 (more than quadrupled); and C) an estimated 181,919 hectares of avocados are planted in Michoacán (for export, meaning that the total area planted to avocados may easily be twice that). This growth has been at the expense of woodlands with physical features and altitudes suitable for avocado growing, as seen in the various specialist studies and official documents discussed above. There are also several articles published in the last 10 or 15 years that, in line with the instructions for form completion, are not referenced herein but are in the public domain. In any case, it is clear that the authority is fully aware of the environmental impacts and yet still continues to support avocado producers to export by issuing CFIs.

PARAGRAPH 47. For its part, in its response to information access request 330024422001013, dated 30 August 2022 (Exhibit 6), with respect to the mechanisms implemented to comply with Article 99 of the LGDFS, Profepa states that: "...the Office carries out inspection and oversight actions", but does not state any results of these actions, making its response discursive and demagogical. It further states that it has no reports, and does not state that it has sent any to the Ministry of Agriculture in accordance with Article 99 of LGDFS, with respect to the areas affected by forest fires, logging or deforestation in the 2000–2022 period. This is quite serious, as Profepa's duties include addressing and following up on all acts affecting the forest and the environment.

PARAGRAPH 48. In Michoacán, Ecological Zoning (*Ordenamientos Ecológicos del Territorio*—OET) is a dead letter. The state zoning plan is from 2011. There have been six regional zoning plans from between 2003 and 2011. Between those same dates, there have been only five ecological zoning plans for the 113 municipal territories. None of them have been enforced. The OETs in Michoacán are outdated and obsolete (Revuelta and Sereno 2022). That is to say, there is no environmental planning. In the case of avocado production in Michoacán, Semarnat also fails to enforce OETs that are a central instrument of Mexico's environmental policy. The provisions of Articles 17, 18, 19, and 20, and particularly 20 BIS 1 of the LGEEPA, expressly provide that Semarnat must provide technical support for the development and execution of regional and local ecological zoning programs.

PARAGRAPH 49. Considering the environmental damage that has been and continues to be caused by avocado production, and the failure to effectively enforce environmental laws, as pointed out above, there is a direct violation of Articles 93, 94, 96, 97, 98 and 99 of the LGDFS. But that is hardly all: the enforcement failure further affects the failure to enforce other environmental laws, namely Articles 5 sec. II, IX, IX, 15 sec. III, IV, IX, XII, XVII, 19, 20 BIS 1, 21, 78, 79, 88, 89, 98, 99, 100, 159 BIS and related articles of LGEEPA; Articles 7 BIS sec. XI, 9 sec. XVI, XXXVI, 14 BIS 5 sec. IX, X, XI, XII, XVI, XVII, 16, 29, 21, 25, 28, 29, 48-54, 64, 119, 120 and related articles of the LAN; Articles 1, 2, 4, 5 sec. V, 12, 13, 164-177 and related articles of the LDRS; Articles 7 sec. VI subsection a), XXII and XXV, 26 sections I, III, IV, VIII, IX, XI, XIII and related articles of the LGCC; Articles 1, 4, 5, 6, 9, 18, 19, 20, 70, 106, 107 and related articles of the LGVS; and the resulting violation of the principles established in Article 4 of the Political Constitution of the United Mexican States.

PARAGRAPH 50. As seen in the description and analysis above, there is an attitude of irresponsibility by the federal authorities. They consistently avoid their obligations and try to pass the issue along to other authorities. It is clear that responsible and concerned authorities lack the necessary information, are not taking the proper actions, and therefore are failing to perform their duties and

comply with the law. This is serious, since these failures to effectively enforce the environmental law are severely harming the forest, worsening climate change, causing severe harm to biodiversity and ecosystems, and are thus affecting Michoacán, the country, the North American region and the planet, in clear contradiction of the commitments established in Chapter 24 of the USMCA.

PARAGRAPH 51. Chapter 24 of the USMCA, approved by Mexico, the United States of America and Canada, establishes the environmental principles for international trade, which apply to the production and marketing of Michoacán avocados (USMCA 2020).

PARAGRAPH 52. Mexico's lack of adequate regulations and the serious failure to enforce the environmental laws violate paragraphs 24.2, 24.3, 24.4, 25.15, 24.23 and 24.24 in Chapter 24 of the USMCA.

PARAGRAPH 53. In paragraph 24.2, the Parties recognize that enhanced cooperation to protect and conserve the environment and the sustainable use and management of their natural resources brings benefits that can contribute to sustainable development, strengthen their environmental governance, support their implementation of international environmental agreements to which they are party, and complement the objectives of the USMCA. Despite that, there are no signs of cooperation to protect and conserve the environment in Michoacán's avocado growing regions. On the contrary, deforestation and related environmental damage due to the failure to effectively enforce environmental laws are well documented.

PARAGRAPH 54. Paragraph 24.3 provides that each Party shall strive to ensure that its environmental laws and policies provide for, and encourage, high levels of environmental protection, and shall strive to continue to improve its respective levels of environmental protection. As evidenced herein, in Michoacán's avocado region and certainly other parts of the country, environmental regulation is limited, but worse, not enforced. The evidence shows that there are no effective commitments or substantive actions to protect the environment.

PARAGRAPH 55. Paragraph 24.4 specifically provides that no Party shall fail to effectively enforce its environmental laws. This is a very important and sensitive point, as this submission has documented a flagrant failure (over 20 years) to effectively enforce environmental laws, as recognized by the authorities themselves in the responses to access to information requests, by failing to effectively enforce the provisions of Articles 93, 97 and 99 of the LGDFS (paragraphs 37-45, herein), thereby violating other provisions contained in a range of environmental laws, as indicated in paragraph 49, above.

PARAGRAPH 56. Other provisions of Chapter 24 are also being violated.

PARAGRAPH 57. There is a violation of USMCA Paragraph 24.5 pertaining to public environmental information. Environmental information is scarce and out of date. The official website of the state's [Michoacán's] Environmental Secretariat does not contain environmental information. Other sources of information, such as the State Forestry Information System or Semarnat's National Environmental and Natural Resources Information System contain very general, disperse and outdated information, which fails to comply with this [Paragraph 24.5's] requirement, which can be ascertained with an in-depth analysis of the issue.

PARAGRAPH 58. Paragraph 24.7 of the USMCA addresses environmental impact assessments and public participation; however, there is no evidence of any such assessments in Michoacán avocado region, no recommendations have been issued, and no specific actions have been taken. This issue could also undergo a broad review.

PARAGRAPH 59. Paragraph 24.13 of the USMCA refers to social responsibility and environmentally responsible business conduct. In this sense, APEAM seeks a "greenwashing", saying that it promotes environmentally responsible business conduct through reforestation actions. Its website (<https://www.apeamac.com/>) refers to certain reforestation actions and states, for example, that in 2020, 383 hectares were reforested. This is clearly important, but if we consider that (as stated by the local Environment Department (see paragraph 17 herein) that 60,000 hectares were deforested, then only 0.5 [sic, 0.64%] of the affected area was reforested, making it practically irrelevant. It also states that growers adhered to the Agenda 2030 commitments and even issued a Communication on Engagement (COE). However, it is widely known that Agenda 2030 contains general principles of good faith and does not establish concrete, measurable or assessable goals, as avocado production in Michoacán requires. It further states on its website that 11 certifications were met (some producers surely have some certifications, and others have others); however, no certification addresses the principles of environmental protection and preservation. The website also mentions certain social responsibility actions, including sponsoring some schools. Doubtless, this is a valuable action, even though it has a very relative impact, as it supported only 11 schools, of the more than 6,000 that exist in the state. Thus, APEAM's actions may be "good will" or "a marketing strategy," but in any case it is evident that they are quite marginal and insufficient to affect the magnitude of the area or the environmental damage being caused.

PARAGRAPH 60. According to paragraph 24.15 on biodiversity, the protection of ecosystem services and sustainability is especially relevant. The grave deforestation occurring in Michoacán, due to the increase in avocado growing, is seriously affecting biodiversity, as supported by the scientific studies referred to above.

PARAGRAPH 61. In the same sense, USMCA paragraph 24.23 acknowledges the important role of the conservation and sustainable management of forests in providing numerous ecosystem services, including carbon storage, maintaining water quantity and quality, stabilizing soils, and providing habitat for wild fauna and flora, thereby providing environmental, economic and social benefits for present and future generations, and the importance of combatting illegal logging. These principles are violated by the

grave deforestation, the "environmental informality," and the failure to effectively enforce the environmental laws in the avocado sector, as discussed above.

PARAGRAPH 62. It is clear that avocado production in Michoacán is currently causing serious environmental externalities, under a deficient environmental regulation and the authorities' failure to enforce them. However, the industry is very important to economic and social life. Therefore, it requires solutions that foster sustainability. An adequate environmental regulation of avocado production in Michoacán would benefit EVERYONE. It would favor producers, as it would increase demand and the value of the product in international markets; it would favor the federal and local governments, as it would solve a public problem of environmental balance and sustainability; it would also favor US and Canadian markets and consumers, as it would ensure the quality of the product and compliance with the environmental rules at source; it would also be favorable for people in Mexico and throughout the region, as it would contribute to the preservation of the environment and guarantee the human right to a healthy environment; and it would favorably ensure compliance with the principles of Chapter 24, thereby building environmental sustainability in the region and around the planet.

PARAGRAPH 63. In addition to reviewing the administrative practices to effectively enforce the law, this requires adapting the legal framework regulating avocado production in Michoacán and the implementation of a public policy designed for such purpose, with efficient administrative actions (new controls, mechanisms, etc.). Here, it is fundamental to implement actions in at least two senses. First, an ENVIRONMENTAL CERTIFICATION is needed, establishing parameters such as property background (deforestation, fires, etc.); physical characteristics of the soil; water supply and wastewater; buffer zones; percentage of original woodland area; offset mechanisms; agricultural border; plastics management; and the use of hail cannons, among others. Second, a state ENVIRONMENTAL TAX is needed, to be levied on producers and aimed solely and remediate the ecological damage and to incentivize better agro-environmental practices, in order to remediate the environmental harm caused over the last 30 years. The parameters making this type of tax viable have been recognized by the Mexican Supreme Court.

PARAGRAPH 64. With respect to whether the matter has been communicated to the relevant authorities of the Party in question, and any response provided thereby, I hereby state as follows: In accordance with the Constitution, Article 8, and the Human Right to Information, the following was stated in a filing with Semarnat, through the National Transparency Platform:

*"1. We hereby notify you that avocado production in Michoacán has generated a series of negative environmental impacts—externalities—for more than 30 years, documented by several scientific articles by UNAM and UMSNH academics, among others, in issues such as deforestation, pollution, effects on biodiversity, water quality and availability, climate change and others, affecting the human right to a healthy environment, violating the provisions of Constitutional Article 4; Articles 5 sections III, XII and XIX; 15 sections III, IX and XVIII of the General Ecological Balance and Environmental Protection Act; and Articles 93, 94, 97, 98, 99 and related articles of the General Sustainable Forestry Development Act.*

*In this regard, I ask whether the Ministry is aware [of these externalities] and what actions have been taken?*

*2. I request any documents containing the technical reports to measure the negative impacts of avocado production in Michoacán, during the period, 2000-2022.*

*3. I request information with respect to the actions taken and their assessment to address the negative impacts of avocado production in Michoacán."*

PARAGRAPH 65. With respect to the preceding paragraph, on 23 November 2022, in Ruling No. Semarnat/UCVSDHT/UT/114472022 (Exhibit 7), the country's top environmental authority simply answered that "...no specific precedent or record was found with respect to this request," and that "...no information relating to the request filed was found...". This clearly shows not only the authority's disregard for a serious and delicate issue that is perfectly documented in scientific studies, official documentary reports (from the Chamber of Deputies and the environmental authorities themselves, as noted in the preceding paragraphs), as well as countless reports and articles in national and international media, but also the Mexican bureaucracy's irresponsibility and failure to enforce environmental laws.

PARAGRAPH 66. As to whether reasonable actions have been undertaken or if available recourse has been pursued, I hereby attest: The legal framework for the defense of the environment arises from the Constitution's Article 4, giving rise to six actions before five authorities, to which Revuelta (2019) refers as the Penta-Dimension of Environmental Law in Mexico. None of them are viable. The LGDFS does not contemplate any legal action that citizens can undertake pertaining to the failure to enforce Articles 93, 94, 96, 97, 99 and related articles. The possibility of a citizen complaint under LGEEPA is exceeded by media exposure, the torrent of scientific studies that have been published over more than 15 years (several of which were even sponsored by the authorities themselves, as seen in the references) and the responses from Semarnat and Profepa (Exhibits 6 and 8) to access to information requests. Therefore, for this specific case, no other actions are available to private citizens in Mexico.

PARAGRAPH 67. Based on the foregoing, it is evident that, currently and for more than the past 20 years, MEXICO IS ENGAGING IN A SERIOUS FAILURE TO EFFECTIVELY ENFORCE ENVIRONMENTAL LAWS with respect to avocado

production in Michoacán. Today, it is a country where the environmental laws are not complied with, and the authorities try to avoid their obligations and responsibilities. Therefore, the only viable way to stop the ecocide being caused by avocado production in Michoacán (Ecocide, 2023) is this submission to the Secretariat of the Commission for Environmental Cooperation, which is hereby submitted individually and with the support of 4,600 signatures, as recorded by Change.org (Exhibit 8).

PARAGRAPH 68. Lastly, I hereby request that my personal data collected be treated confidentially and not be published in any publicly accessible medium, with regard to safety concerns and to protect my identity, in accordance with Articles 7 and 12 of the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data ("Convention 108"), to which Mexico has adhered, as well as other applicable principles and laws.