Submission SEM-23-005 (*Valle de Bravo-Amanalco Sub-Basin*)

UNOFFICIAL TRANSLATION of the Statement of Facts:

Failures to effectively enforce environmental and water law in the Municipality of Valle de Bravo, State of México, in connection with excessive real estate development and a lack of comprehensive water treatment measures

Introduction and background to the submission

1. The municipality of Valle de Bravo is in the southwestern part of the State of México and forms a part of one of the country's most important hydrological regions. The subwatershed to which it belongs, called Valle de Bravo–Amanalco, not only supplies water to the local population of the municipality and the surrounding communities but also, via the Cutzamala System, accounts for 24% of the drinking water consumed in 13 boroughs of the Mexico City Metropolitan Area and 14 municipalities of México State.[1] This makes it one of the world's largest drinking water supply systems.[2]
2. The Valle de Bravo–Amanalco subwatershed is one of the biggest water suppliers among the six watersheds making up the Cutzamala System. It is of great importance for its floral and faunal diversity and its forests, which protect the water catchment and provide habitat for many local and migratory species, including various endemics.[3]
3. Nearly the entirety of the territory of Valle de Bravo is within a federal protected natural area called *Área de Protección de Recursos Naturales* (APRN) *Cuencas de los Ríos Valle de Bravo, Malacatepec, Tilostoc y Temscaltepec* that was declared in 1941. In 2005, in view of the environmental importance of the area, it was reclassified in order to protect the forested slopes and rivers constituting the water catchment area. It is important to emphasize the immense international importance of this protected natural area in that it harbors one of the largest stands of oyamel fir, the preferred host tree of the monarch butterfly. This butterfly is an emblematic and protected species that migrates in the winter from Canada and the United States to the forests near Valle de Bravo.[4] The municipality also encompasses several state-level protected natural areas established to protect sites of strategic and symbolic value to the local population.
4. Valle de Bravo is a municipality with great biological and cultural diversity, making it an area of unique national importance: 60% of its territory is made up of pine-oak forests, and

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[1] *Programa de Manejo, Área de Protección de Recursos Naturales, Cuencas de Los Ríos Valle de Bravo, Malacatepec, Tilostoc y Temascaltepec*, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Programa-de-manejo-APRN-valle-de-Bravo-2019.pdf, at 26.

[2] Instituto Mexicano de Tecnología del Agua and Fundación Gonzalo Río Arronte, *Plan Estratégico para la Recuperación Ambiental de la Cuenca Amanalco–Valle De Bravo: Actualización*, November 2012, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Plan-Estrategico-de-recuperacion-Cuenca-Amanalco.pdf, at 41.

[3] Ibid., Executive Summary, online at https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Plan-Estrategico-de-recuperacion-Cuenca-Amanalco.pdf.

[4] *Programa de Manejo, Área de Protección de Recursos Naturales, Cuencas de Los Ríos Valle de Bravo, Malacatepec, Tilostoc y Temascaltepec*, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Programa-de-manejo-APRN-valle-de-Bravo-2019.pdf, at 5.

it also comprises sizeable areas of cloud forest.[5] These forests contain a great many wildlife species, many of them protected under Mexican law.[6] The municipality is also water-rich, comprising 396 springs,[7] six important rivers,[8] and the Valle de Bravo dam, built in 1944 to drive hydroelectric power generation in the Cutzamala System.

5. Valle de Bravo has witnessed "non-inclusive development that the prior inhabitants of Valle de Bravo have had to contend with. In the last fifty years, development in the municipality has revolved around real estate for weekend tourism. This has led to privatization by weekenders and that industry, of resources formerly in common use—such as the reservoir, springs, rivers, and forested areas. This has had an impact on public spaces used by the locals, causing anger and resentment on their part."[9]

6. Valle de Bravo exhibits a set of environmental and urban planning problems that are intimately bound up with the lack of harmonization of land use planning instruments. Real estate development places constant pressure on areas covered by certain development restrictions, such as forested or agricultural areas. This pressure leads to excessive changes in land use and density, generating cumulative environmental impacts; year after year, the urban fringe extends farther into protected areas, causing considerable impacts on biodiversity; this includes impacts on many protected and endemic wildlife species as well as on water catchment, soil erosion, water pollution, and soil contamination from untreated solid waste. For further general background on the environmental status of the subwatershed, **Appendix I** contains a set of maps illustrating the loss of forest cover in specific areas of the municipality, as well as four maps summarizing forest-loss patterns in the subwatershed for the years 2001 to 2021; the types of vegetation and land use predominating in the Valle de Bravo–Amanalco subwatershed; an ecological integrity map depicting environmental quality in the subwatershed; and a map showing the proportion of the land that is contained within natural areas.

7. Water quality in the watershed has deteriorated. There is a serious problem of silting and contamination of the reservoir, caused by direct discharges of sewage. These in turn result from a lack of functioning drainage systems and sewage treatment plants, and from improper agricultural discharges containing high levels of nitrates, phosphates, and aquaculture waste into rivers descending from the upper part of the watershed.[10]

8. As mentioned, the municipality of Valle de Bravo sits within the boundaries of a federal protected natural area, whose declaration and management program establish certain limitations and rules for the use and enjoyment of the territory. This declaration and its enforcement are the responsibility of the National Protected Natural Areas Commission (*Comisión Nacional de Áreas Naturales Protegidas*—Conanp), the federal body in charge

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[5] Instituto Mexicano de Tecnologiía del Agua and Fundación Gonzalo Río Arronte, *Plan Estratégico para la Recuperación Ambiental de la Cuenca Amanalco–Valle De Bravo: Actualización*, November 2012, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Plan-Estrategico-de-recuperacion-Cuenca-Amanalco.pdf, at 61.

[6] Specifically, by Mexican Official Standard NOM-059-Semarnat-2010.

[7] Instituto Mexicano de Tecnología del Agua and Fundación Gonzalo Río Arronte, *Plan Estratégico para la Recuperación Ambiental de la Cuenca Amanalco–Valle De Bravo: Actualización*, November 2012, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/06/Plan-Estrategico-de-recuperacion-Cuenca-Amanalco.pdf, at 40.

[8] Ibid. at 43.

[9] Comisión de Participación Ciudadana, Subcomité Permanente del COPLADEMUN, *Agenda para el Desarrollo Territorial Sostenible e Incluyente de Valle de Bravo*, March 2018, unpublished document, at 7.

[10] xxxxxxxx[Redacted]

of managing all of the country's protected areas.

9. In 2020, a new municipal urban development plan (*plan municipal de desarrollo urbano*—PMDU) was adopted by the municipality of Valle de Bravo.[11] In theory, it is to be applied in coordination with the management plan for the APRN in order to establish the urban land uses solely for zones considered "human settlements." Nevertheless, the PMDU, supposedly in accordance with the management plan for the APRN, establishes various land uses for two types of areas having the same name in both instruments: sustainable ecosystem use areas (*áreas de aprovechamiento sustentable de los ecosistemas*—SSE) and sustainable natural resource use areas (*áreas de aprovechamiento sustentable de los recursos naturales*—SSRN). Both of these are outside the "human settlements" zone and consist largely of forested areas and fragile ecosystems collectively called "non-urbanizable areas."

10. In SSEs and SSRNs, the municipality oversteps its authority by establishing land uses outside the zones of "human settlement." It establishes various subcategories of SSEs and SSRNs that open up the land within the protected natural area to real estate development, much of it built without the required environmental impact statements and land-use change approvals. As a result, various parts of the municipality, and ultimately the federal protected natural area, are exhibiting legal and illegal land-use changes from forested to urban. The administrative authorities at the federal, state, and municipal levels, with their various powers and jurisdictions, lack the human, technical, and financial capacity to address this situation.

11. As regards the strict enforcement of environmental and water law, the Ministry of the 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), the National Water Commission (*Comisión Nacional del Agua*—Conagua), and Conanp, along with their offices in the state of México, have seriously limited human, technical and financial resources with which to effectively enforce the declaration and the management program for the protected natural area, as well as the applicable environmental zoning provisions.

12. This situation is exacerbated by a lack of inter-institutional coordination between the municipal government, which is in charge of enforcing the PMDU and its zoning provisions, and the above-mentioned federal and state powers, which deal with matters pertaining to state approvals and permits. The situation is further compounded by the chronic institutional weakness of this order of government at the national level. To illustrate, **Appendix II** of this submission describes three projects with different characteristics that reflect the environmental and urban development problems being experienced, along with their corresponding impacts on the environment, natural resources, and environmental services. Also attached is **Appendix III,** a letter sent by us to the federal environmental attorney after a meeting held in her office in December 2022, containing a list of complaints filed and the status of each case, and requesting a response in regard to progress on these cases.

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[11] Municipality of Valle de Bravo, Government of the State of México, and Edomex, *Plan Municipal de Desarrollo Urbano de Valle de Bravo*, 2020, online at: https://seduo.edomex.gob.mx/sites/seduo.edomex.gob.mx/files/files/valledebravo/PMDU_VB_2020.pdf

I. Failures to effectively enforce the environmental law

a) Violations of the General Ecological Equilibrium and Environmental Protection Act (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA), with respect to the obligation to regulate the use and enjoyment of the APRN on the basis of studies of carrying capacity and acceptable limits of change

13. Land use policy is defined as a function of the problems intended to be solved in a given society. Such problems must be confronted by different means whose principal components revolve around experience and scientific knowledge. These methods may take different forms, such as plans, programs, and projects.[12]

14. In the case of areas of the State of México where the original environment has not been significantly altered by human activity or that require preservation and restoration[13] because of the environmental and cultural value they possess, the preferred strategy for protecting them is the declaration of a protected natural area, the categories of which are set out in LGEEPA Article 46.

15. The purpose of protected natural areas is to preserve representative environments by means of a set of strategies consisting, for the most part, of identifying and delimiting portions of the corresponding territory, on the basis of their biological, physical, and socioeconomic features, thus constituting a comprehensive and dynamic program for the zoning of the territory in accordance with the type of activities carried out in different parts of it.

16. LGEEPA Article 47 BIS, for its part, establishes the premise that a protected area can be subdivided into two zones: the core zone, which is more restrictive in order to preserve fragile and vulnerable ecosystems, and the buffer zone, which has lesser restrictions, allowing various kinds of human activities to be carried out there. Both zones can be subzoned according to specific modalities.

17. The APRN Cuencas de los Ríos Valle de Bravo was declared a protected natural area in the category of "natural resource protection areas" and has no core zone, only a buffer zone. That is, the federal authority decided not to restrict certain activities even where there are certain exceptional zones, such as monarch butterfly sanctuaries.

18. This buffer zone is in turn subdivided into 11 subzones, of which seven are of particular relevance in the municipality of Valle de Bravo, as may be seen on the map given in **Appendix IV** of this submission: the Valle de Bravo sustainable natural resource use subzone; the sustainable use of ecosystems subzone; the special use subzone; the public use subzone; water catchment subzones; recovery subzones; and human settlement subzones.

19. For the regulation of these subzones and the activities carried out in each of them, LGEEPA Article 65 provides for the creation of a management plan, which must be issued within the period of one year following the promulgation of the corresponding declaration. In the case of this APRN, it was issued 13 years after this protected area was reclassified.

20. The management plan for protected natural areas is the planning and regulation master plan. It lays down the basic activities, measures, and guidelines for the management and administration of the protected natural area in question.[14] Put in general terms, it is the

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[12] Economic Commission for Latin America and the Caribbean (ECLAC), *Planning for Sustainable Territorial Development in Latin America and the Caribbean* (LC/CRP.17/3), Santiago, 2019, at 21.

[13] Pursuant to LGEEPA Article 3 paragraph II.

[14] Pursuant to Article 3 paragraph XI of the Protected Natural Areas Regulation to LGEEPA.

instrument that governs the protected area and the one to which all other instruments are secondary.

21. As regards the uses that may take place within protected natural areas, Article 80 of the Protected Natural Areas Regulation to LGEEPA provides that Semarnat (acting through Conanp) determines the respective rates and establishes the proportions, the acceptable limits of change, or the corresponding carrying capacities, with reference to the relevant methods and studies.

22. However, the management plan for this APRN does not contain these parameters. It does not specify densities, intensities, conditions, or modalities to which works and activities carried out in the protected area must adhere. Nor does it place limits on use as a function of studies of limits of acceptable change and carrying capacities. On the contrary, it leaves this to the municipality, as may be corroborated from the content of the PMDU. As stated above, the PMDU establishes residential densities outside the existing settled areas, in non-urbanizable zones, and more specifically in SSEs and SSRNs. The following images and tables taken from the PMDU illustrate this situation.

Tabla 61. Esquema conceptual para la clasificación del territorio normatividad de usos del suelo.

<table>
<tr><th rowspan="2">PMDUVB Convencional</th><th rowspan="2">Realidad de Valle de Bravo</th><th colspan="2">PMDUVB de Valle de Bravo 2020</th></tr>
<tr><th>Clasificación del Territorio (Plano E1)</th><th>Normatividad (Plano E2)</th></tr>
<tr><td>Área Urbana</td><td>Asentamiento humano (CONANP)
Resto del área urbana identificado por el PMDU</td><td>Área Urbana
(Asentamiento Humano de acuerdo con la CONANP)</td><td>Normas urbanas (Clave H)</td></tr>
<tr><td>Área Urbanizable</td><td>Asentamientos humanos dispersos (con mayor concentración y vinculación a áreas urbanas)
Zonas aptas para el futuro crecimiento</td><td rowspan="2">Área No Urbanizable
(Aprovechamiento sustentable de los ecosistemas y Aprovechamiento sustentable de los recursos naturales - Bosques conservados y Valle de Bravo; de acuerdo con la CONANP)</td><td rowspan="2">Superficie con aprovechamiento sostenible (Clave SS)</td></tr>
<tr><td>Área No Urbanizable</td><td>Resto del Municipio</td></tr>
</table>

Fuente: Elaboración propia, 2017

Tabla 66.Fichas técnicas de normatividad aplicable en zonas de aprovechamiento sustentable de los ecosistemas

USO GENERAL.	USO ESPECIFICO		SSE3	SSE4	SSE5	SSE6	SSE7	SSE8	SSE9	SSE10	SSE11	SSE12	SSE13	SSE14	SSE15	SSE16	SSE17	SSE18
DENSIDAD	HABITANTES / HECTÁREA		94	94	47	28	28	14	14	7	5	2	2	1	1	1	1	1
	Nº DE VIVIENDAS / HECTÁREA		20	20	10	6	6	3	3	1	1	0.5	0.33	0.25	0.20	0.16	0.14	0.125
	M² DE TERRENO BRUTO / VIVIENDA		500	500	1,000	1,667	2,500	3,333	5,000	7,000	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000
	M² DE TERRENO NETO / VIVIENDA		300	300	600	1,000	1,500	2,000	3,000	4,200	6,000	12,000	18,000	24,000	30,000	36,000	42,000	48,000
LOTE MINIMO EN SUBDIVISIÓN*	FRENTE (ml)		15	15	20	25	27	30	30	30	60	70	80	100	120	130	150	160
	SUPERFICIE (m²)		300	300	600	1,000	1,500	2,000	3,000	4,200	6,000	12,000	18,000	24,000	30,000	36,000	42,000	48,000
	No DE VIVIENDAS / LOTE MÍNIMO		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUPERFICIE SIN CONSTRUIR	% DEL LOTE (USO HABITACIONAL)		60	60	70	80	80	82	86	88	91	95	96	96	97	97	98	97
	% DEL LOTE (USO NO HABITACIONAL)		60	60	70	80	80	82	86	88	91	95	96	96	97	97	98	97
COS SUPERFICIE DE DESPLANTE	% DEL LOTE (USO HABITACIONAL)		40	40	30	20	20	18	14	12	9	5	4	4	3	3	2	3
	% DEL LOTE (USO NO HABITACIONAL)		40	40	30	20	20	18	14	12	9	5	4	4	3	3	2	3
ALTURA MAXIMA DE CONSTRUCCION	USO HABITACIONAL	NIVELES	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		M SOBRE NIVEL DE DESPLANTE	7.5	11.3	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	USO NO HABITACIONAL	NIVELES	2	3	2	2	2	2	2	2	2	2	3	3	2	2	3	3
		M SOBRE NIVEL DE DESPLANTE	7.5	11.3	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	11.25	11.25	7.5	7.5	11.25	11.25
CUS (INTENSIDAD MÁXIMA DE CONSTRUCCION)	USO HABITACIONAL (veces la sup. del lote)		0.8	1.2	0.6	0.4	0.4	0.36	0.28	0.24	0.18	0.1	0.08	0.08	0.06	0.06	0.04	0.06
	USO NO HABITACIONAL (veces la sup. del lote)		0.8	1.2	0.6	0.4	0.4	0.36	0.28	0.24	0.18	0.1	0.12	0.12	0.06	0.06	0.06	0.09
RESTRICCIONES MÍNIMAS DE CONSTRUCCIÓN	FRENTE		5	5	5	7.5	7.5	7.5	7.5	10	10	10	10	15	15	20	20	20
	LATERALES		2	2	2	2.5	2.5	2.5	2.5	5	10	15	20	25	25	25	25	30
	FONDO		5	5	5	5	5	10	10	12.5	25	45	65	65	65	95	95	95

Tabla 68. Fichas técnicas de normatividad aplicable en zonas de aprovechamiento sustentable de los Recursos Naturales

USO GENERAL.	USO ESPECIFICO		SSRN3	SSRN4	SSRN5	SSRN6	SSRN7	SSRN8	SSRN9	SSRN10	SSRN11	SSRN12	SSRN13	SSRN14	SSRN15	SSRN16	SSRN17	SSRN18
DENSIDAD	HABITANTES / HECTÁREA		94	94	47	28	28	14	14	7	5	2	2	1	1	1	1	1
	Nº DE VIVIENDAS / HECTÁREA		20	20	10	6	6	3	3	1	1	0.5	0.33	0.25	0.20	0.16	0.14	0.125
	M² DE TERRENO BRUTO / VIVIENDA		500	500	1000	1667	1667	3333	5,000	7,000	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000
	M² DE TERRENO NETO / VIVIENDA		300	300	600	1,000	1,000	2,000	3,000	4200	6,000	12,000	18,000	24,000	30,000	36,000	42,000	48,000
LOTE MINIMO EN SUBDIVISIÓN*	FRENTE (ml)		15	15	20	25	25	25	30	30	50	80	100	120	130	140	150	160
	SUPERFICIE (m²)		300	300	600	1,000	1,000	2,000	3,000	4,200	6,000	12,000	18,000	24,000	30,000	36,000	42,000	48,000
	No DE VIVIENDAS / LOTE MÍNIMO		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUPERFICIE SIN CONSTRUIR	% DEL LOTE (USO HABITACIONAL)		65	65	75	82.5	82.5	82.5	88	90	92	95	98	97.5	98	98	98	98
	% DEL LOTE (USO NO HABITACIONAL)		65	65	75	82.5	82.5	82.5	88	90	92	95	98	97.5	98	98	98	98
COS SUPERFICIE DE DESPLANTE	% DEL LOTE (USO HABITACIONAL)		35	35	25	17.5	17.5	17.5	12	10	8	5	2	2.5	2	2	2	2
	% DEL LOTE (USO NO HABITACIONAL)		35	35	25	17.5	17.5	17.5	12	10	8	5	2	2.5	2	2	2	2
ALTURA MAXIMA DE CONSTRUCCION	USO HABITACIONAL	NIVELES	2	2	2	2	3	2	2	2	2	2	3	3	2	2	3	3
		M SOBRE NIVEL DE	7.5	7.5	7.5	7.5	11.25	7.5	7.5	7.5	7.5	7.5	11.25	11.25	7.5	7.5	11.25	11.25
	USO NO HABITACIONAL	NIVELES	2	2	2	2	2	2	2	2	2	2	3	3	2	2	3	3
		M SOBRE NIVEL DE	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	11.25	11.25	7.5	7.5	11.25	11.25
CUS (INTENSIDAD MÁXIMA DE CONSTRUCCION)	USO HABITACIONAL (veces la sup. del lote)		0.7	0.7	0.5	0.35	0.525	0.35	0.24	0.2	0.16	0.1	0.06	0.075	0.04	0.04	0.06	0.06
	USO NO HABITACIONAL (veces la sup. del lote)		0.7	0.7	0.5	0.35	0.35	0.35	0.24	0.2	0.16	0.1	0.06	0.075	0.04	0.04	0.06	0.06
RESTRICCIONES MÍNIMAS DE CONSTRUCCIÓN	FRENTE		5	5	5	7.5	7.5	7.5	7.5	10	10	10	10	15	15	20	20	20
	LATERALES		2	2	2	2.5	2.5	2.5	2.5	10	10	15	20	25	25	25	25	30
	FONDO		5	5	5	5	5	10	10	25	25	45	65	65	65	95	95	95

23. None of this is happening by chance. Subzones not within the territory of the municipality of Valle de Bravo are governed by restrictions on the installation of urban infrastructure. Yet in this municipality these matters were dealt with differently, due to the residential and tourism dynamic of Valle de Bravo, even though it is precisely this dynamic that has caused considerable deterioration of the APRN; and they were dealt with differently with no better justification than a putative pattern of residential demand.[15] That is, Conanp and the municipality dispensed with an environmental perspective, giving precedence to urban demands over environmental ones, without any basis for doing so.

24. With these acts, it is clear that Conanp is failing to fulfill its obligation to determine appropriate uses on the basis of the necessary studies, as discussed above. Pursuant to LGEEPA Article 62, only the federal authority has the power to modify the extent and, as applicable, any other provisions relating to the APRN, most pertinently the land uses permitted within it.

25. In short, the federal authorities are failing to fulfill their obligation to regulate the uses of this APRN on the basis of studies of carrying capacity and acceptable limits of change. It

[15] This last justification is derived from chapter X of the PMDU, which presents the territorial and urban zoning strategies as well as the sectoral zoning.

is important to emphasize that this is obligatory, not discretionary, under LGEEPA and the Protected Natural Areas Regulation.

26. Along the same lines, even if the management plan for the APRN did not regulate land use within it, LGEEPA Article 20 BIS 4 paragraph II prescribes that this obligation would have to be met by a local ecological zoning plan (*programa de ordenamiento ecológico local*—POEL). Pursuant to Article 20 BIS 5 paragraph V, the POEL must be produced and approved jointly by Semarnat, the México State government, and the municipality of Valle de Bravo.

27. But this did not occur. On the contrary, and as we stated, this obligation was relegated to the PMDU, which takes an urban and not an environmental perspective. The PMDU permits the densification of land use outside of settled areas. This is clearly a failure to enforce federal law: promulgating the POEL is not an option but a legal requirement.

b) Failures to enforce, relating to public complaint and environmental impact procedures

28. Pursuant to the *Regional Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean* (Escazú Agreement), which forms a part of the Mexican domestic legal order and of Mexican environmental law, the rights of access to information, participation, and justice are indispensable to the strengthening of democracy, sustainable development, and human rights. Within this framework, access to justice is a right that must be enforced not only by jurisdictional bodies but also by administrative ones. In this context, procedural guarantees must be strictly enforced, since their purpose is to enable persons to adequately defend their rights from any type of act or omission.

29. The Mexican government has difficulty enforcing these guarantees. This is particularly true of guarantees set out in national legislation, most notably LGEEPA, as in the case of the public complaint procedure established by LGEEPA Articles 189 to 204. These are not only mechanisms of civic participation; they also, under LGEEPA Articles 161 to 175 BIS, give rise to inspection and surveillance procedures that may result in penalties.

30. In the context of the public complaint procedure relating to environmental matters, the administrative authorities generally carry out isolated proceedings devoid of civic participation. In these matters, procedural rights are diminished—for the complainant in particular, whose access to the proceedings that give rise to penalties is systematically blocked.

31. Thus, as explained in the introduction to this submission, innumerable illicit acts have been carried out in the Valle de Bravo–Amanalco subwatershed, both by private entities or individuals and by the state authorities, which latter are failing to enforce the applicable zoning provisions. There has been no oversight by Profepa or Conagua, even though the matters in question have been made known to them. On the whole, there have been only haphazard procedural responses by these authorities, if any at all. For greater clarity, details of three specific cases are provided in **Appendix II,** as mentioned above.

32. The examples presented in **Appendix II** illustrate an ongoing situation in which project developers, whether private parties or government entities, flagrantly violate environmental and urban planning law. They do this by commencing construction without obtaining the applicable permits and approvals. The response of the federal environmental authority is very limited; the projects follow their course, many of them even after having

been made conditional on compliance with safeguards. Ultimately, in the majority of cases, the projects are completed and are regularized before the competent bodies. This leaves a very negative precedent for future developers: they see the results and take the same road, instead of applying in advance for the applicable forested land use change and environmental impact approvals. It is important to note that these projects, including the ones presented in **Appendix II**, are cumulatively causing grave impact on the ecosystem and environmental services of Valle de Bravo and contiguous sites within the Valle de Bravo–Amanalco subwatershed.

c) Failures to enforce, relating to best available information; specific cases involving failure to prevent the inception of new population centers within federal protected natural areas

33. The environmental doctrine developed by the Mexican Supreme Court (*Suprema Corte de Justicia de la Nación*) in judicial review (*amparo en revisión*) cases 610/2019, 923/2016, and 54/2021 requires that both administrative and jurisdictional proceedings consider the best available scientific information in order to avoid or minimize environmental harm. In this they are to observe the principles of prevention, precaution, and *in dubio pro natura* (when in doubt, choose nature).

34. While it is true that this has become increasingly relevant today, it is also true that it is rarely applied by the authorities, and in particular the federal authorities, whose assessments and rulings customarily fail to consider the best available information, especially in matters relating to environmental harm.

35. Yet Mexican environmental law contains specific provisions requiring that the best available scientific information be obtained. For example, in the case of environmental impact assessment, LGEEPA Article 35 BIS 1 provides that environmental impact service providers must incorporate into the studies that they produce the best existing techniques and methodologies, as well as the most effective prevention and mitigation measures.

36. To facilitate this process, Article 4 paragraph II of the Environmental Impact Assessment Regulation to LGEEPA stipulates that Semarnat has the power to "draft, publish, and make available to the public guides to the production of the preventive report, the environmental impact statement in its various modalities, and the risk study."

37. Pursuant to Article 9 of the Environmental Impact Assessment Regulation, Semarnat must provide guides to developers for the production of the environmental impact statement that are suited to the type of work or activity in question. For this purpose, it must publish guides in the Official Gazette of the Federation (*Diario Oficial de la Federación*—DOF) and in the Environmental Gazette (*Gaceta Ecológica*). To date, this has not happened. These guides are only found on the official web portal of Semarnat[16] and have not been updated since 2002, nor have they been published in the DOF or the Environmental Gazette.

38. This is relevant in that these guides are intended to instruct developers in preparing and producing the results of environmental impact assessment studies in a more orderly, efficient, and complete manner.

39. The starting point of the criteria set out in these guides is that they establish the minimum requirements for environmental impact studies as regards the scientific information that they must contain in order for proper environmental assessment. If they are not published

[16] Available online at: https://www.gob.mx/semarnat/documentos/guias-de-impacto-ambiental.

in the DOF or the Environmental Gazette, they are not binding, much less taken into account by project developers.

40. In other words, these guides represent the bare minimum of information necessary to assess the environmental impact of projects. If this bare minimum is not enforced, then developers can obviously diminish or distort the information, as they currently do. For more information, including concrete examples of real estate developments in the municipality of Valle de Bravo, see **Appendix V**.

41. Compounding all this is the fact that Semarnat is failing to fulfill its legal obligation to prevent the inception of new population centers within federal protected natural areas, pursuant to LGEEPA Article 46 penultimate paragraph, and the Protected Natural Areas Regulation. Semarnat has granted approval in cases where real estate projects include the construction of urban infrastructure, green space, access roads, internal roads, piping, sidewalks, water infrastructure, sanitary drainage, electricity, natural gas, median strips, public transportation stops, and more. This has taken place in forested areas classified under the management plan as non-urbanizable zones. For more information on particular cases, see **Appendix V**.

42. To summarize the foregoing discussion, the following failures to enforce federal law are occurring:

a) The APRN management plan does not establish densities, intensities, conditions, or modalities to which works and activities carried out in the APRN must adhere, as it must do under Article 74 of the Protected Natural Areas Regulation to LGEEPA.

b) The management plan does not place limits on permitted activities within the APRN, through the establishment of scientifically based rates and proportions, such as studies or methods for determining acceptable limits of change and/or carrying capacities, in accordance with Article 80 of the Protected Natural Areas Regulation to the LGEEPA.

c) Semarnat has not produced and approved, in conjunction with the municipal and state governments, the POEL governing land uses outside of population centers, pursuant to LGEEPA Articles 20 BIS 4 paragraph II and 20 BIS 5 paragraph V.

d) Profepa is failing to fulfill its legal obligation to verify compliance with safeguards in order to prevent harm from continuing, pursuant to LGEEPA Articles 161 and 170 and Articles 45, 47, and 68 paragraph XII of the Internal Regulation of Semarnat. These establish the obligation to impose safeguards where applicable given the existence of environmental harm, as well as to take the necessary steps for the surveillance and enforcement thereof.

e) Profepa is failing to fulfill the legal obligation to respect the complainants' capacity as interveners and to inform them of harm caused and of measures taken to prevent its consolidation, pursuant to LGEEPA Article 193 and Articles 6 to 8 of the Escazú Agreement.

f) Profepa is failing to fulfill its legal obligation to apply the environmental responsibility regime set out in the Federal Environmental Responsibility Act (*Ley Federal de Responsabilidad Ambiental*), including prioritizing restoration measures over compensation measures, as well as filing charges and prosecuting environmental offences arising from harms caused to the environment, pursuant to Article 222, second paragraph, of the National Code of Criminal Procedure (*Código Nacional de Procedimientos Penales*) and LGEEPA Article 182.

g) Profepa is failing to fulfill its legal obligation to corroborate each and every one of the facts complained of within its jurisdiction, pursuant to LGEEPA Article 192 second paragraph.

h) Semarnat is failing to fulfill its legal obligation to publish methodological guides to environmental impact assessment in the DOF, pursuant to LGEEPA Article 4 paragraph II and Article 9 of the Environmental Impact Assessment Regulation, and thereby to require that the best available information be used in conducting environmental impact assessments.

i) Semarnat is failing to fulfill its legal obligation to prevent the inception of new population centers within federal protected natural areas, pursuant to LGEEPA and the Environmental Impact Assessment Regulation and in accordance with LGEEPA Article 46 penultimate paragraph.

d) Failures to enforce, relating to water quality and quantity in Valle de Bravo and its main tributaries

43. According to official data, "recent decades have witnessed the water in the reservoirs of the Cutzamala System undergo a significant deterioration in quality as a result of deforestation, expansion of the agricultural frontier without proper soil and water conservation practices, and the growth of an urban and rural population that lacks adequate wastewater and sewer services."[17]

44. The main reservoirs of the Cutzamala System are characterized by having high concentrations of nutrients (such as nitrates, phosphates, iron, and silica) and organic matter, eutrophication being enabled by the lack of any sort of treatment of the runoffs that reach the reservoirs directly; and these runoffs are increasing.[18]

45. The contamination index, which compares contamination levels at the site to natural background contamination levels, shows considerable increase, especially in the Valle de Bravo reservoir. The value in this index rose from 2.00 in 2009 to 9.68 in 2012, a space of only three years. Furthermore, some of the parameters assessed, such as chemical oxygen demand, greases and oils, and fecal coliforms, exceeded background levels in most of the years studied.[19]

46. As regards contamination of the rivers emptying into the Valle de Bravo reservoir, three of the four—the Los González, Amanalco, and Chiquito (or El Molino) rivers—exceed background levels for some of the parameters assessed. This is caused by direct discharge of raw sewage into these rivers. The fourth tributary, the Tizates river, exhibits high levels of contamination, making it a continual source of contaminated water entering the Valle de Bravo reservoir.[20] **Appendix VI** presents water quality monitoring studies produced in the field by xxx[Redacted], and the xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx[Redacted], using the global Water Watch methodology. The highest contamination indices are concentrated in the urban areas of Valle de Bravo, primarily within the limits of the municipal seat. It

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[17] Conagua, and World Bank Group, *Cutzamala—Diagnóstico Integral: Diagnóstico para el Manejo Integral de las Subcuencas Tuxpan, El Bosque, Ixtapan del Oro, Valle de Bravo, Colorines-Chilesdo y Villa Victoria pertenecientes al Sistema Cutzamala*, 2015, online at: https://observatoriovalle.org.mx/wp-content/uploads/2021/07/99219-P150092-SPANISH-WP-PUBLIC-Box393194B.pdf, at 111.

[18] *Ibid.* at 112.

[19] *Ibid.* at 114.

[20] *Ibid.*

should be noted with respect to these results that domestic[21] and international standards[22] allow a maximum of 1000 colony-forming units (CFUs) of coliforms for human contact. Several bodies of water in the subwatershed exceed this amount by a factor of 50.

47. According to data obtained from sampling performed by the Federal Public Health Commission (*Comisión Federal para la Protección contra Riesgos Sanitarios*—Cofepris) in the Valle de Bravo reservoir, the most contaminated locations and tributaries during the years 2015 to 2018 were the municipal dock, Molinos–Los Hoyos (Fontana Rosa), El Mosco (mouth of the Velo de Novia river), San Gaspar, and La Peña. There is near-constant coliform contamination at the municipal dock and at Molinos–Los Hoyos. The contamination is periodic and intermittent in the case of El Mosco, San Gaspar, and La Peña. **Appendix VII** compiles the sampling conducted by Cofepris.

48. High levels of microorganisms (9515 CFU/100 ml of *E. coli*[23]) were detected in the Amanalco river, one of the largest rivers emptying into the Valle de Bravo reservoir. However, these levels increase downstream of the outfall from the Amanalco sewage treatment plant (17,033 CFU/100 ml de *E. coli*). This means that the plant is not operating properly.[24] The same situation occurs with the majority of the rivers running into the Valle de Bravo reservoir, especially downstream of concentrations of human settlement. The federal water authorities—i.e., Conagua and the watershed bodies—are the ones responsible for preventing such situations, but they have yet to take the actions necessary to slow the crisis and the deterioration of water quality. **Appendix VIII** contains a document concerning ongoing water monitoring with community participation, for the sustainable recovery of Valle de Bravo, a project carried out at regular intervals by the *Universidad Nacional Autónoma de México* and the xxxxxxxxxxxxxxxxxx[Redacted]. The document contains relevant data on water quality and quantity in Valle de Bravo.

49. Sampling at the municipal dock yields year-round numbers in excess of 1,600 MPN (most-probable-number method, per 100 ml) for *E. coli*, which is well above the permitted threshold for recreational uses (<200). Yet the lion's share of tourism in Valle de Bravo takes place in this area, which features floating restaurants, for instance, exposing residents, workers and visitors alike to health hazards.

50. This continual influx of nutrients and organic matter is feeding the growth of a large quantity of pathogenic microorganisms and toxic microalgae, which are observed on the water surface during algal blooms. Such blooms occur at various times throughout the year. Their presence *represents a major health risk* to direct users of the reservoir, the residents of the Mexico City Metropolitan Area, and other localities in central Mexico. These blooms are also the *largest problem with which the Los Berros water treatment plant has to contend.*

51. The lack or inadequate operation of sanitary infrastructure not only diminishes water quality in the Valle de Bravo reservoir, it also has an effect on treatment costs at the Los

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[21] Mexican Official Standards NOM-001-Semarnat-2021, NOM-127-SSA1-2021, and NOM-002-SEMARNAT-1996, among others.

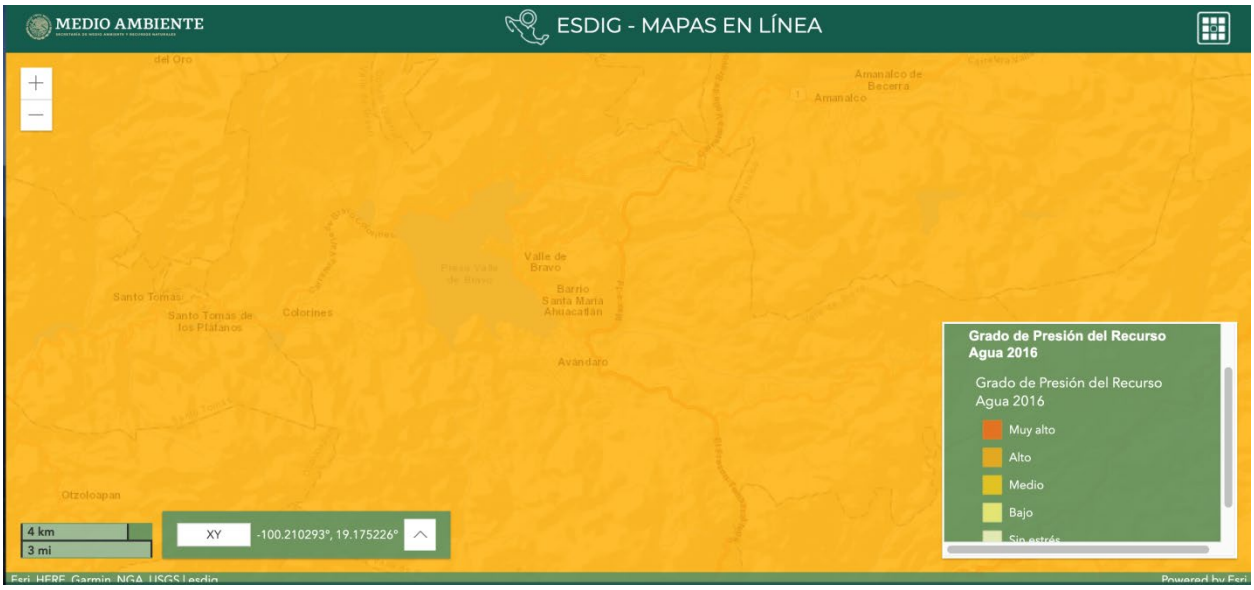
[22] Programa Internacional Global Water Watch.

[23] J. Ramírez Zierold et al., "Unidades de Formadoras de Colonias: Monitoreo Hídrico Permanente con Participación Social para la Recuperación Sostenible de Valle de Bravo," November 2022, at 4.

[24] J. Calderón Cendejas, L. Madrid Ramírez, J. Ramírez Zierold, J. Díaz Valenzuela, M. Merino Ibarra, S. Morató Sánchez de Tagle, and A. Chino Téllez, "Evaluation of the Impacts of Land Use in Water Quality and the Role of Nature-Based Solutions: A Citizen Science–Based Study," *Sustainability* 13 (2021): 10519, online at: https://doi.org/10.3390/su131910519.

Berros plant.[25] According to information obtained from Conagua (**Appendix IX**), the plant spent over 170 million pesos on electricity and aluminum sulfate in the period running from October 2021 to October 2022. If public money were instead spent on prevention and sanitation in the subwatershed, these costs would be lower, and such preventive measures would contribute to improving the quality of the water running into the Valle de Bravo reservoir.

52. According to data from the Semarnat geographical information database (*Espacio Digital Geográfico*—ESDIG),[26] the municipality of Valle de Bravo and the municipality of Amanalco de Becerra are putting heavy pressure on water resources, as may be seen in the image below.



Source: ESDIG

53. An order published in the DOF on 4 January 2018 in regard to the updating of the mean annual availability of groundwater from the 653 aquifers in the United Mexican States, which are aggregated into Water Administration Regions (*Regiones Hidrológico-Administrativas*), indicates that the aquifer corresponding to Villa Victoria–Valle de Bravo shows a deficit of -1.481191 hm^3/year.

54. Subsequently, the updated water availability from the Villa Victoria–Valle de Bravo aquifer in México State, obtained from the Geographical Information System on Water (*Sistema de Información Geográfica del Agua*—SIGA),[27] which has a cutoff date of 20 February 2020, shows that there is no available water to be granted in the form of concessions. Instead, there is an annual deficit of 1,466,270 m^3, which quantity is being non-renewably drawn from the aquifer. This was indeed published in the DOF on 17

[25] This is the largest drinking water treatment plant in the Cutzamala System, supplying water to Mexico City and the Toluca Valley.
[26] Online at: https://gisviewer.semarnat.gob.mx/geointegrador2Beta/index.html.
[27] Online at: https://sigagis.conagua.gob.mx/gas1/Edos_Acuiferos_18/edomex/DR_1505.pdf.

September 2020; it indicates a downward trend, with no action taken by Conagua to reverse it.

55. Notwithstanding this data, Conagua is continuing to grant extensions on existing concessions. One example is concession no. MEX-L-0040-26-01-17 of 21 March 2019, permitting 20,000.00 m³ of water to be drawn, supposedly for "agricultural" use. The reality is that this water is for household use, since it is in fact being channeled into a housing development.[28] This extension was granted on the pretext that the extension need not be predicated on the figures published in the availability order. Yet Articles 22 and 24 of the National Waters Act (*Ley de Aguas Nacionales*—LAN) provide that when granting concessions, assignments, or extensions, the authority must take mean annual water availability into account.

56. In addition, 290 national waters deeds or permits (not counting extensions) have been granted to public and private entities in the municipality of Valle de Bravo alone[29] but have not been audited by the responsible authorities. When such extensions are granted arbitrarily in spite of the water deficit, the risks rise exponentially.

57. According to official data from Conagua,[30] only three inspections were conducted in Valle de Bravo in 2020;[31] there were 12 in 2021,[32] 24 in 2022,[33] and none so far in 2023.[34] It is worth noting that several of these inspections targeted a single person or entity and arose from complaints.

58. If more evidence were needed, according to drought classification data from the National Biodiversity Information System (*Sistema Nacional de Información sobre Biodiversidad*—SNIB), which is maintained by the National Biodiversity Institute (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*—Conabio), the municipalities of Valle de Bravo and Amanalco de Becerra exhibit SEVERE and VERY SEVERE drought, respectively, as may be seen in the images below.

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[28] This may be corroborated with environmental impact approval no. DFMARNAT/2103/2017 of 7 April 2017 granted to Promotora Ecovalle, S.A. de C.V., for the project titled "Manifestación de Impacto Ambiental para la Lotificación del Club Residencial Los Álamos, Valle de Bravo, México."

[29] Data obtained from the Registro Público de Derechos del Agua, online at: https://app.conagua.gob.mx/consultarepda.aspx.

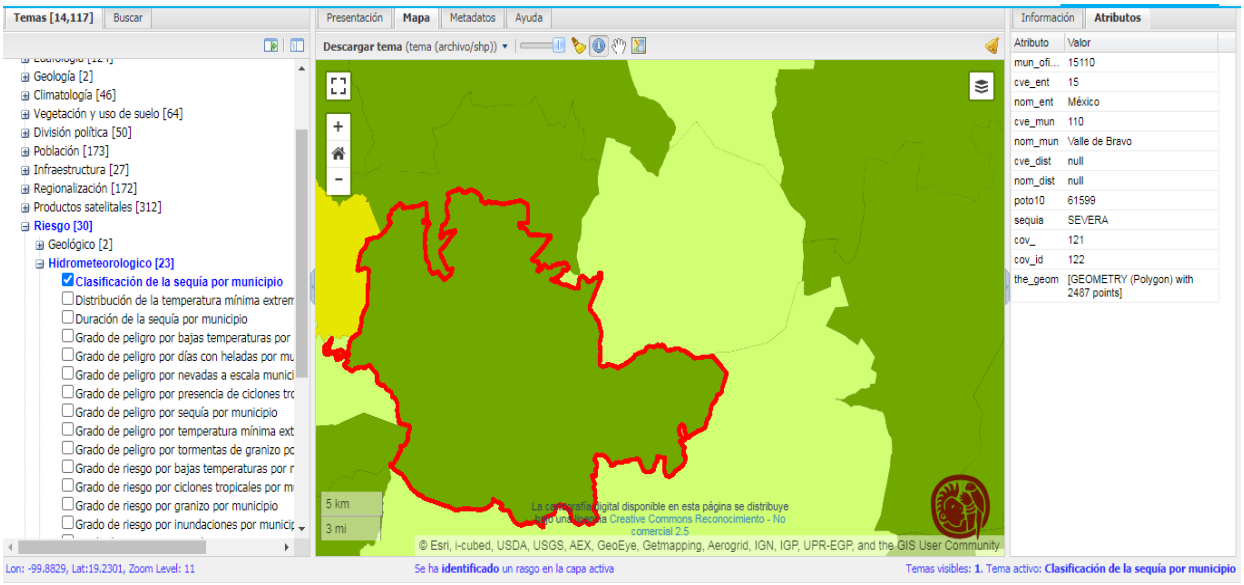
[30] Data obtained online at: https://www.gob.mx/conagua/documentos/derechos-y-obligaciones-de-los-usuarios-ante-una-visita-de-inspeccion.

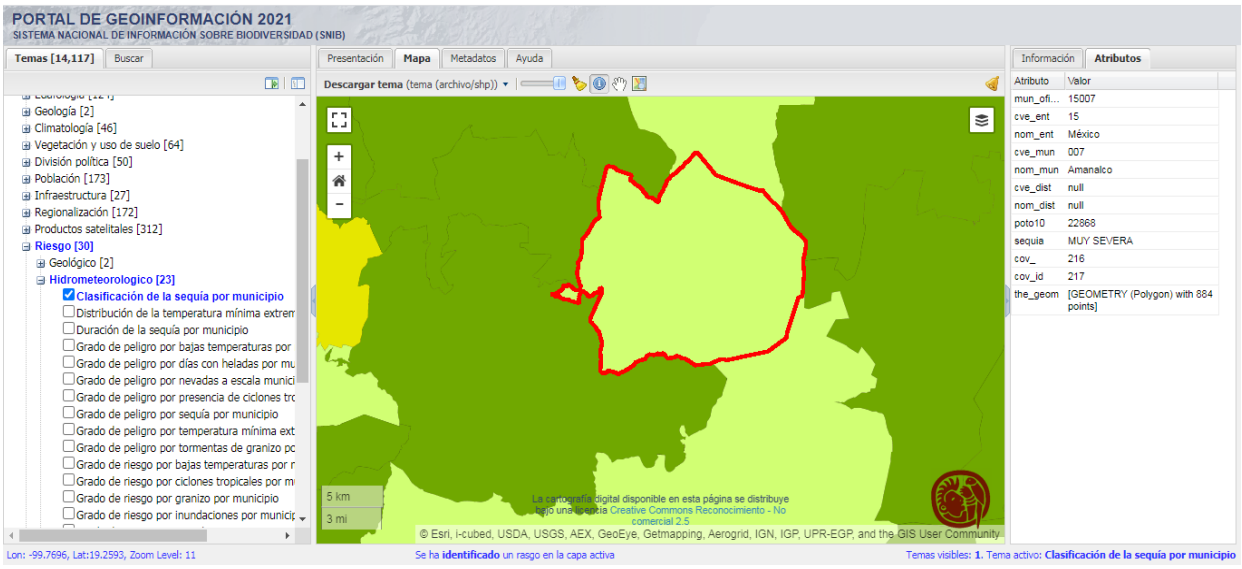
[31] Data available online at: https://www.gob.mx/cms/uploads/attachment/file/607021/12_DICIEMBRE_PNI_2020_VP.pdf.

[32] Data available online at: https://www.gob.mx/cms/uploads/attachment/file/695480/12_DICIEMBRE_PNI_2021_VP.pdf.

[33] Data available online at https://www.gob.mx/cms/uploads/attachment/file/796039/DICIEMBRE_2022.pdf.

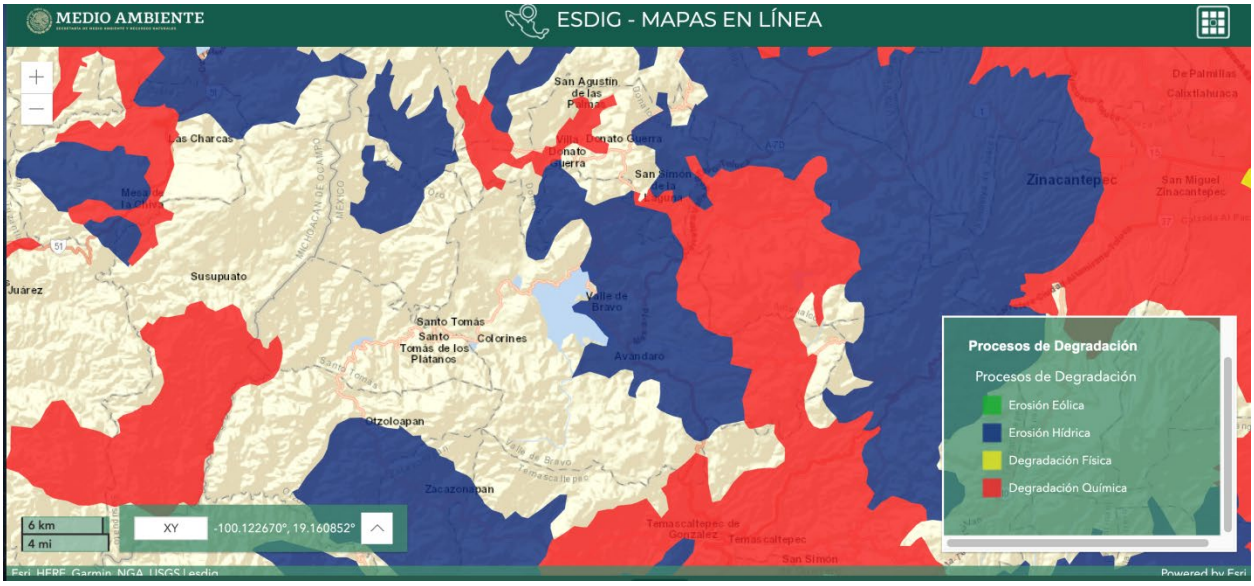
[34] Data available online at: https://www.gob.mx/cms/uploads/attachment/file/810140/BASE_P_BLICA_FEBRERO_2023.pdf.





59. On top of all these trends, there are also adverse phenomena such as soil degradation. In the case of the Valle de Bravo–Amanalco subwatershed, water and chemical erosion processes are taking place,[35] as may be seen in the images below.

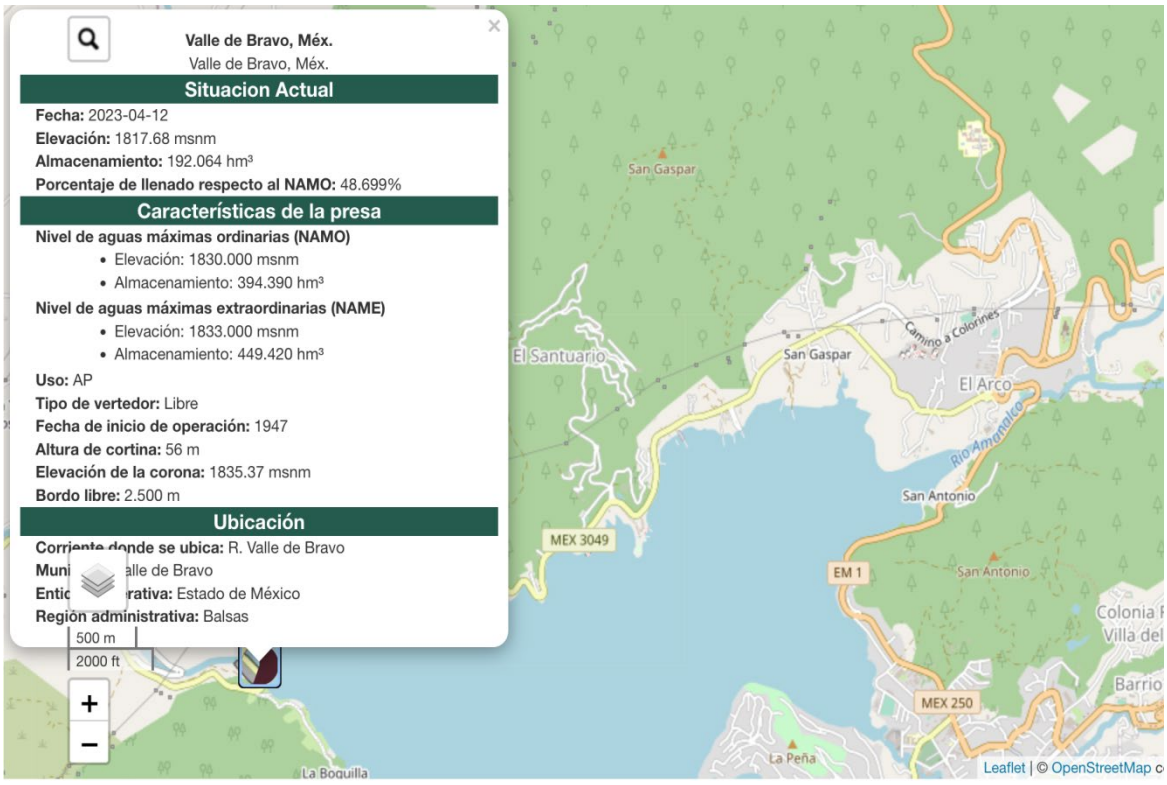
[35] Chemical degradation involves processes leading to the reduction or elimination of soil biological productivity and is strongly associated with the presence of agricultural activities.



Source: ESDIG (Semarnat)

60. Added to all this is a large number—more than 250, according to information obtained from civil society organizations—of private reservoirs built in recent years, some of them without even obtaining environmental impact approval.[36] The majority of these are filled by diverting natural watercourses or by pumping groundwater. Most of these have been built in the municipality of Valle de Bravo because of the tourism phenomenon discussed earlier. **See corresponding Google Earth appendix.** All these factors are obviously affecting and putting pressure on water resources in the subwatershed. Furthermore, these factors have reduced water levels in the Valle de Bravo reservoir. According to the section of Conagua's National Water Information System concerning the monitoring of Mexico's largest reservoirs, the reservoir is currently at only slightly more than 48% of its capacity,[37] or at the lowest levels in history. This may be seen in the image below.[38]

[36] A. Ríos, "Detectan más de 250 presas privadas en la cuenca de Valle de Bravo-Amanalco," *La Jornada*, online at: https://estadodemexico.jornada.com.mx/detectan-250-presas-privadas-valle-de-bravo-amanalco/.
[37] Online at: https://www.gob.mx/conagua/documentos/almacenamiento-en-presas-del-sistema-cutzamala.
[38] Information obtained online from: https://sinav30.conagua.gob.mx:8080/Presas/.

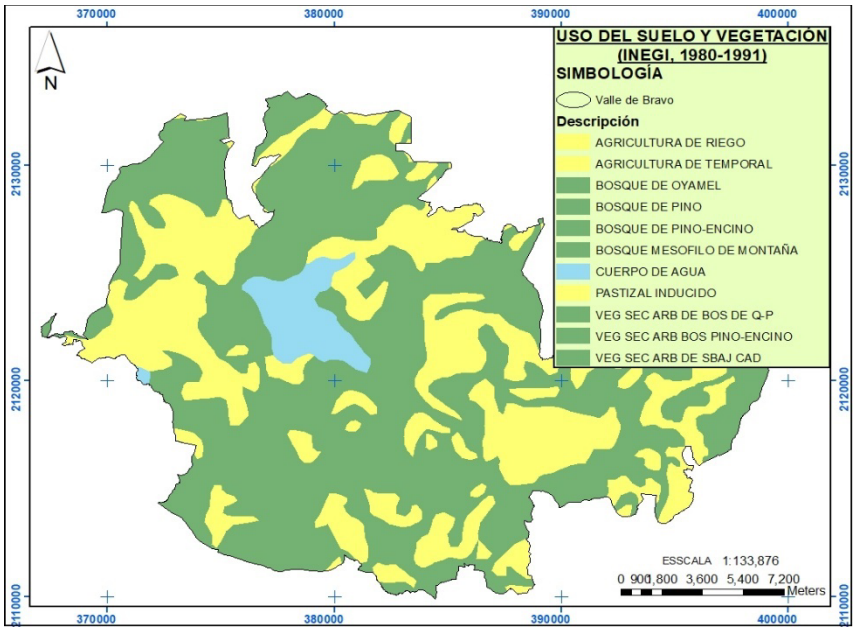


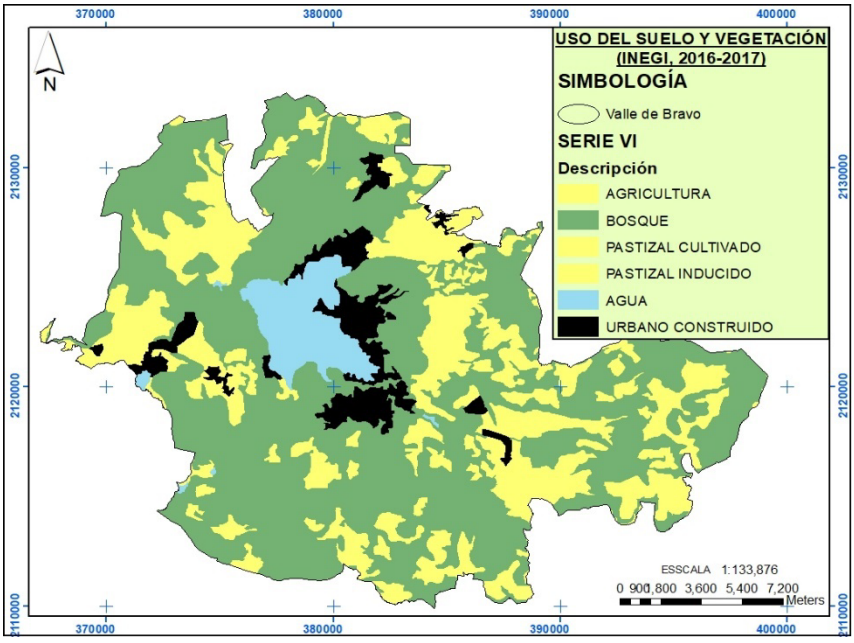
Source: National Water Information System, Monitoring of México's Largest Reservoirs (Conagua)

61. Declining water levels have caused the water to recede from the banks in parts of the reservoir, and innumerable individuals have seized the opportunity to backfill and build on the newly exposed land. Conagua has done nothing to properly investigate these acts.

62. On a related note, a study by the Faculty of Geography of the *Universidad Autónoma del Estado de México*[39] states that land use changes have a critical influence on the workings of ecosystems. The loss of vegetation cover slows the production of new soil, reduces water infiltration, and increases the speed and volume of surface runoff. Twenty-five percent of the watershed consists of groundwater recharge zones. This goes beyond the boundaries of the watershed to include recharge of the water table. However, instead of improving, the situation is steadily worsening. In the initial years, land use changes were primarily due to agriculture, while more recently, both agriculture and urbanization have been gaining in the forested areas, as shown in the figures below.

[39] Online at: https://dgoia.edomex.gob.mx/sites/dgoia.edomex.gob.mx/files/files/POER%20VALLE%20DE%20BRAVO%20AMANALCO.pdf.





II. Measures and strategies to counter loss of water quality and quantity in Valle de Bravo

63. The foregoing discussion reflects the grave threats to water in the subwatershed. There is a clear pattern of unceasing land conversion. As a result, erosion and the aforementioned consequences have caused constantly worsening water pollution and shortages, without the authorities enforcing the existing standards, plans, and strategies that are intended to reverse these processes. This is especially urgent given that the Valle de Bravo–Amanalco watershed is the main water collector supplying the Colorines and Ixtapantongo reservoirs.

It supplies 7 m^3/s, accounting for 40% of the water supplied by the Cutzamala System to Mexico City.[40] The Cutzamala System is the most important water complex producing, storing, channeling, treating, and distributing drinking water to Mexico City and the state of México.

64. This situation has been a shared concern for various sectors and actors who are experiencing and making use of the environmental services provided by the subwatershed. There have been various efforts on the part of organized civil society to reverse these processes of degradation of water quality and quantity, through local projects, environmental education, policy advocacy, and lobbying of the executive, legislative, and judicial authorities. An illustration of this is a petition to federal senators drawing urgent attention to the matter, this petition having so far garnered 52,000 signatures on Change.org.[41]

65. But in order to reverse the processes of degradation discussed above, it is incumbent upon the authority to enforce the standards, plans, and strategies drafted and promulgated by the authority itself, since the purpose of these is to provide for comprehensive water management.[42]

66. Among the obligations of the authorities, as prescribed by Mexican water law, is that of producing and implementing plans to address specific problems related to water governance. That is to say, the constitutional and legal obligation of the authorities is not merely to develop national plans but also to develop and implement those that are necessary to address specific situations. This is evident from a reading of LAN Article 15, and Article 46 of the Water Act for the State of México and its Municipalities (*Ley del Agua para el Estado de México y Municipios*), which provide that "*water planning is mandatory for the comprehensive management of water resources and the conservation of natural resources, vital ecosystems, and the environment.*" Therefore, the federal authorities have the obligation to apply plans and programs intended to address water-related problems.

67. On this score, LAN Article 9 paragraph II provides that Conagua is obligated to oversee and periodically assess compliance with national water policy. LAN Article 9 paragraph XXVI creates the additional obligation for Conagua to promote the efficient use and conservation of water in all phases of the water cycle, with a view to achieving comprehensive water management.

68. The National Water Plan (*Programa Nacional Hídrico*), published in the DOF on 30 December 2020,[43] contains a set of specific measures that have not been enforced by the federal authorities and are vital in combating the aforementioned degradation and its effects. One of these, priority strategy 1.3, "Strengthen water and sewer utilities so that they can provide quality services to the public," contains the following measure:

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[40] Online at: https://dgoia.edomex.gob.mx/sites/dgoia.edomex.gob.mx/files/files/POER%20VALLE%20DE%20BRAVO%20AMANALCO.pdf.

[41] The text of the petition is available at: https://www.change.org/p/semarnat-mx-conagua-mx-senadomexicano-caemedomex-seduo-edomex-raulbccue-escasez-de-agua-amenaza-a-la-cdmx-y-al-estado-de-m%C3%A9xico?redirect=false.

[42] LAN Article 3 paragraph XXIX defines integrated water management as the process promoting the coordinated management and development of water, land, and resources related to them and to the environment, with the aim of maximizing social and economic well-being fairly and without compromising the sustainability of vital ecosystems.

[43] Online at: https://www.dof.gob.mx/nota_detalle.php?codigo=5609188&fecha=30/12/2020#gsc.tab=0.

- Verify compliance with water concessions and assignments as well as discharge permits. (Responsible authority: Conagua.)

69. For its part, strategy 1.4, "Address water infrastructure requirements in order to prepare for present and future needs," contains the following obligations:

- Identify drinking water, drainage, and sewage treatment infrastructure requirements in population centers. (Responsible authority: Conagua-Sedatu.)
- Promote the rehabilitation of out-of-service municipal sewage treatment plants. (Responsible authority: Conagua.)

70. Strategy 2.4, "Guide the development of the industrial and service sectors so as to mitigate their impact on water resources," sets out the following obligation:

- Establish programs for collaboration on the recovery of overexploited watersheds and aquifers. (Responsible authority: Conagua-Conafor.)

71. Strategy 4.1, "Conserve watersheds and aquifers to improve hydrological service provision capacity," contains the following measures:

- Promote conservation, restoration, and planning of watersheds, particularly the higher parts thereof. (Responsible authority: Conanp-Conafor-Sedatu.)
- Develop strategies to ensure that there are ecological flows in rivers and wetlands, in order to strengthen the water cycle. (Responsible authority: Conagua-Conanp-Semarnat.)
- Promote the protection of aquifer recharge zones and provide incentives for induced recharge. (Responsible authority: Conagua-Conafor-Conanp-Sedatu.)

72. It should be noted, in relation to the strategy for conducting the studies necessary to determine ecological flow rates[44] in the Valle de Bravo–Amanalco subwatershed, that paragraph 7.4 of the National Water Plan, "Relevance of priority objective," reads as follows: "Preserve the integrity of the water cycle in order to ensure the provision of the hydrological services offered by watersheds and aquifers." This paragraph defines such studies as a *sine qua non* for the protection of ecosystems experiencing water-related problems, as is currently the case in the subwatershed.

73. Strategy 4.3, "Regulate watersheds and aquifers in order to guarantee the quality and quality of water required by the public and to reduce overexploitation," prescribes specific measures as follows:

- Implement surveillance and control measures for overexploited aquifers and watersheds that have priority status due to contamination. (Responsible authority: Conagua.)

74. The above-mentioned strategies are not the only applicable ones. However, it is our view that for the purposes of this submission, they are intimately linked to the processes of deterioration taking place in the subwatershed. These measures are essential to curtailing these processes, yet the competent Mexican authorities are failing to fulfill their legal obligations.

75. Along the same lines, the Mexican legal framework comprises various plans and strategies that are complementary to the National Water Plan and have also not been implemented by the federal authorities. For example, the National Forestry Plan (*Programa Nacional*

[44] In accordance with Article 3 paragraph LIV, environmental use or use for ecological conservation defines ecological flow as the minimum volume necessary in receiving bodies, including watercourses of various kinds or reservoirs, or the minimum natural discharge of an aquifer, that must be conserved in order to protect the environmental conditions and the ecological equilibrium of the system.

Forestal) 2020–2024, published in the DOF on 31 December 2020,[45] has as its third priority objective: "Conserve and restore the ecosystem service provision capacity of strategic forested areas by means of an inclusive and participatory focus that contributes to ensuring a healthy environment for the development and well-being of the population." A number of different specific strategies and measures, directed at different bodies and entities, are contemplated for achieving this objective:

- Promote mechanisms to offset the negative impacts of various economic activities on the provision of environmental services, by means of economic instruments. (Specific measure 3.1.5, directed at Conafor, Semarnat, INECC, Conagua, Sedatu, Sader, Sener, SCT, SE, Sectur.)
- Promote nature tourism in ejidos, communities, and plots of land incorporated into the payment-for-environmental-services scheme with best management and forest ecosystem conservation practices. (Specific measure 3.1.8, directed at Conafor, Sectur).
- Promote the participation of owners and holders of forested land in comprehensive multi-year forest restoration projects and link them to production or active conservation schemes in order to render the recovered forest cover more permanent. (Specific measure 3.2.2, directed at Conafor, Semarnat, Conanp.)
- Promote comprehensive multi-year forest restoration measures in degraded areas located in regions highly vulnerable to climate change, based on a community and ecosystem adaptation focus. (Specific measure 3.2.4, directed at Conafor, Semarnat, INECC, Cenapred, INPI.)

76. Finally, the water and soil conservation component of the management plan for the APRN in question, published in the DOF on 30 November 2018,[46] has as its goal to assist with the restoration of watersheds through the implementation of soil and water restoration and conservation projects and prescribes a number of activities and measures:

- Collaborate on the development of a comprehensive strategic soil and water conservation plan for the APRN.
- Sign coordination agreements with the competent authorities for the development of the strategic soil and water conservation plan.
- Implement the strategic soil and water conservation plan.
- Promote soil and water conservation works with resources from the subsidy programs, with a watershed management focus.
- With the competent bodies, carry out training programs for farmers, ranchers, and foresters on how to implement soil and water conservation works.
- Implement sanitation measures through cleanup campaigns for sites with large accumulations of solid waste.
- Promote agro-ecological practices in food production systems.

III. Conclusion

77. In view of the foregoing, the federal authorities have an inescapable responsibility to implement the measures prescribed by the national plans in order to counteract the causes of deterioration of vital water-related ecosystems. These measures are perfectly applicable to a subwatershed as important as Valle de Bravo–Amanalco. It should be stressed that

[45] Online at: https://www.dof.gob.mx/nota_detalle.php?codigo=5609275&fecha=31/12/2020#gsc.tab=0.
[46] Online at: https://simec.conanp.gob.mx/pdf_pcym/41_DOF.pdf.

some of these measures cannot be carried out in isolation: they require an institutional and governmental coordination strategy in order for their effective enforcement.

78. Despite the deterioration of water resources in the Valle de Bravo–Amanalco subwatershed, Conagua and the watershed bodies are failing to develop and implement specific plans, strategies or measures aimed at counteracting or correcting the overexploitation of water resources and the deterioration of the ecosystems necessary to preserve the collection and storage of these resources, pursuant to LAN Article 15.

79. The full list of the failures to enforce is as follows:

a) It is important to mention that there was a Valle de Bravo–Amanalco watershed commission operating some years ago as the coordinator of public policy for the three orders of government and as the executing body for specific plans, strategies, and measures aimed at preserving the subwatershed, with the active participation of various societal sectors. However, that commission has fallen apart and is no longer functioning, which has exacerbated the problems of the subwatershed. For this reason, one of the specific requests being made of Conagua is to re-instate the Valle de Bravo–Amanalco Watershed Commission as the coordinating body.

b) As the federal water authorities, Conagua and the watershed bodies have abstained from monitoring and verifying that the assignments and concessions granted in the subwatershed are used for the purposes for which they were granted, and whether the grantees comply with the terms and conditions thereof, as prescribed by LAN Articles 9 paragraph XXXVI, 86 paragraphs IV, V, VII, VIII and XII, and 95.

c) Conagua and other federal authorities have abstained from applying the specific measures prescribed by the National Water Plan, among them the requirement of conducting the studies necessary to determine the ecological flow as a *sine qua non* for ecosystem protection.

d) The federal authorities Conafor, Conanp, Semarnat, INECC, Conagua, Sedatu, Sader, Sener, SCT, SE, and Sectur have abstained from producing and carrying out the plans, strategies, and measures of the various federal programs designed for the purpose of curtailing the degradation of water-related ecosystem services.

80. All of the foregoing constitutes clear evidence of how failure on the part of the public entities to fulfill their legal duty directly contributes to deterioration of forest ecosystems and hydrological services in the Valle de Bravo–Amanalco subwatershed. Not only are these failures to enforce contributing to the deterioration of water quality and quantity in the Valle de Bravo reservoir, they are also having an impact on the quality of life of the residents of Valle de Bravo and Amanalco de Becerra, as well as Mexico City, and Toluca, who also benefit from the environmental services provided by this subwatershed.

81. Therefore, these failures to enforce the environmental and water law require study, investigation, documentation, and determination on the part of the Commission for Environmental Cooperation, so that the government of Mexico devotes the necessary human, technical, and financial resources to confronting the problems discussed in this submission and implements the projects and measures necessary to safeguard the Valle de Bravo–Amanalco watershed, its ecosystems, and its natural resources—including water, the source of life.

82. All things considered, the failures or abstentions on the part of the federal authorities in the case at hand center around failures to enforce the following provisions:

- LGEEPA Articles 20 BIS 4 paragraph II, 20 BIS 5 paragraph V, 46 penultimate paragraph, 161, 170, 182, 192 second paragraph, and 193;
- LAN Articles 9 paragraphs II, XXVI and XXXVI, 15, 86 paragraphs IV, V, VII, VIII, XI and XII, and 95**;**
- Articles 74 and 80 of the Protected Natural Areas Regulation to LGEEPA;
- Articles 4 paragraph II and 9 of the Environmental Impact Assessment Regulation to LGEEPA;
- Articles 45 to 47 of the Internal Regulation of Semarnat;
- Article 222 paragraph 2 of the National Code of Criminal Procedure;
- the National Water Plan 2020–2024 strategies 1.3, "Strengthen water and sewer utilities," 1.4, "Address water infrastructure requirements in order to prepare for present and future needs," 2.4, "Guide the development of the industrial and service sectors so as to mitigate their impact on water resources," and 4.1, "Conserve watersheds and aquifers to improve hydrological service provision capacity;"
- the National Forest Plan 2020–2024 priority objective 3, "Conserve and restore the ecosystem service provision capacity of strategic forested areas by means of an inclusive and participatory focus that contributes to ensuring a healthy environment for the development and well-being of the population;" and
- the water and soil conservation component of the management plan for the APRN.

83. These failures by the government of Mexico to enforce the country's environmental law must be considered as violations of the domestically and internationally recognized human rights to a healthy environment and to water and sanitation, which are enshrined in Article 4 of the Mexican Constitution (*Constitución Política de los Estados Unidos Mexicanos*) and yet are being treated in this instance as having no intrinsic value.