

RESEARCH ARTICLE

How green are our laws? Presenting a normative coherence for sustainable development methodology

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Abstract

Policy coherence for sustainable development (PCSD) has become a pillar of supranational sustainable development agendas, promoting “whole of government approaches.” The concept of normative coherence for sustainable development (NCSDD) has emerged as a new stage of policy coherence for sustainable development analysis. NCSDD is a policy approach that aims to promote transformative development by examining the relationship between policies and key sustainability norms, such as those expressed in the sustainable development goals. Normative coherence for sustainable development is recognized in recent scholarship but it remains generalized, lacking operationalization. This article proposes an NCSDD methodology for analysis of legal frameworks. Qualitative empirical research tested this approach in Mexico by focusing on federal laws as well as those in two states: Aguascalientes and Veracruz. The analysis which examined four dimensions of sustainable development (economic, social, security, and environmental) showed that the environmental dimension of Mexico's legal framework is the least prioritized, suggesting that this framework is not very “green” even though environmental laws are the most transversal in content, which indicate significant levels of mainstreaming. Sustainable development experts were then contacted by the research team to validate the findings and interpret the results. This normative coherence for sustainable development methodology aims to situate normative considerations at the center of evaluation in order to promote domestic transformative sustainable development strategies and the “greening” of legal frameworks.

KEYWORDS

environmental governance, legal frameworks, mainstreaming, Mexico, normative coherence for sustainable development, norms, policy coherence for development

1 | INTRODUCTION

Since the establishment of the sustainable development goals (SDGs) in 2015, all countries have committed to pursuing transformative

sustainable development defined as providing for the needs of local populations while addressing power imbalances at the supranational level (see Traoré, 2020). The Goals state: “We are determined to take the bold and transformative steps which are urgently needed to shift

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the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind” (United Nations, 2015). Although definitions of sustainable development differ, often creating conceptual confusion which compromises implementation (Sheehy & Farneti, 2021), the SDGs are generally recognized as a normative compass for sustainable development policy-making (Fukuda-Parr, 2016; Graham & Graham, 2019; Koff et al., 2022; Shaw & Kabandula, 2020; Tan, 2020).

Sustainable development is of course complex and differentiated (Medina-Valdivia et al., 2021), including the social, economic and environmental spheres. Sometimes, policy objectives are conflicting (Kirschke & Kosow, 2021), requiring tradeoffs in sustainable development strategies (Kosow et al., 2022; Tan, 2020). This article presents normative coherence for sustainable development (NCS), defined as the alignment of development instruments and frameworks with key sustainability norms (Häbel, 2020) as an evaluation tool aimed at promoting transformative sustainable development. An important challenge for the implementation of NCS has been its lack of operationalization for policy evaluation. This article addresses the following question: “How can normative coherence for sustainable development be operationalized for the promotion of transformative sustainable development?” The article’s findings show that NCS can potentially reinforce the environmental dimension of sustainable development by strengthening the normative component of policy systems.

This article is divided into six sections. Following this introduction, part two presents a review of the literature on policy coherence for development (PCD), with emphasis on the emergence of NCS, to contextualize it within broader discussions on PCD and its relationship to the transformative development pursued via the SDGs. Part three presents the study’s methodology in detail. Part four includes qualitative empirical analysis of NCS in Mexico based on the aforementioned methodology, followed by part five which discusses the research findings. Finally, part six presents the article’s conclusions.

2 | LITERATURE REVIEW: EMERGENCE AND OPERATIONALIZATION OF NORMATIVE COHERENCE FOR SUSTAINABLE DEVELOPMENT

Policy Coherence for Development, and its successor, Policy Coherence for Sustainable Development (PCSD) have often been proposed as means to implement complex political agendas such as the 2030 Agenda for Sustainable Development (2030 Agenda). Introduced by the Organization for Economic Co-operation and Development’s (OECD) Development Assistance Committee (DAC) in 1991 and adopted by the European Union (EU) in 1993 through the Maastricht Treaty, PCD has emerged as a central element of supranational sustainable development discussions. The concept was first proposed to ensure that non-development policies do not undermine development objectives (OECD, 2005). PCSD, which has been included in the United Nations’ 2030 Agenda for Sustainable Development as part of

Target 17.14, focusing on governance of sustainability partnerships for achievement of the SDGs (United Nations, 2015) promotes a “whole of government” approach to the pursuit of sustainable development objectives (OECD, 2019). Zeigermann (2020) illustrates how inclusion of PCD in the SDGs resulted from transnational policy entrepreneurship which integrated a plurality of stakeholders.

Recently, the OECD (2021) established eight guiding principles for the implementation of PCSD including: (1) strong commitments and leadership at the highest political level, (2) defining, implementing and communicating strategic long-term visions that support PCSD, (3) policy integration across economic, social and environmental spheres, (4) “whole of government” coordination at the national level, (5) engagement of actors at sub-national levels of government, (6) integration of stakeholders in decision-making processes, (7) analyses of policy and finance impacts, and (8) strengthening of monitoring, evaluation and reporting of PCSD in specific policy contexts (OECD, 2021). The first of these principles is crucial for the facilitation of sustainable transformative development because it targets normative sustainability commitments. The OECD specifically calls for the following measures:

- a. Define priority areas, time-bound action plans and key performance indicators for making progress on PCSD and communicating results to the public;
- b. Systematically apply a poverty, gender and human rights perspective to PCSD frameworks in line with the 2030 Agenda ambition of ending poverty in all its forms everywhere, empowering all women and girls and achieving gender equality;
- c. Introduce measures to promote PCSD within government structures so that commitment to PCSD outlives electoral cycles and changes in government, cabinet compositions or government programmes, including identifying a lead institution, responsible for promoting, overseeing and implementing PCSD;
- d. Build leadership capacity in the public service to consistently formulate, implement, and monitor policies coherent with sustainable development across sectors (OECD, 2021, pp. 9–10).

Building on these PCSD-focused commitments, NCS has emerged as a paradigm which prioritizes global sustainability norms in development strategies.

2.1 | The definition and conceptualization of NCS

“Sustainable transformative development” requires profound changes in global political and economic relations. The concept, as defined by scholars such as Fukuda-Parr (2016) addresses power relations as much as it does the provision of basic necessities. Such development, according to this approach, must be rights-based and universal in nature. To achieve this, development strategies must commit to reinforcing global norms, defined as codified systems of ethics or values that emerge within policy communities in order to promote a

TABLE 1 The categorization of the SDGs according to their normative character

Material SDGs	Relational SDGs	Communal SDGs
No poverty	Gender equality	Climate action
Zero hunger	Decent work and economic growth	Life below water
Good health and well-being	Reduced inequalities	Life on land
Quality education	Sustainable cities and communities	
Clean water and sanitation	Responsible consumption and production	
Affordable and clean energy	Peace, justice, and strong institutions	
Industry, innovation, and infrastructure	Partnerships for the goals	

Source: Koff and Häbel (2022) "Normative coherence for development—What relevance for responsive regionalism?" *Development Policy Review*. <https://doi.org/10.1111/dpr.12586>, p. 5.

collective vision for development (Koff & Häbel, 2022). The SDGs promote a transformative vision because they simultaneously pursue material, relational, and communal goals (see Table 1). Material goals focus on socio-economic well-being and service provision, relational goals address power relations and interconnectedness and communal goals safeguard the commons, which are natural resources belonging to/affecting the entire global community (Soares, 2021; Vivekanandan, 2021).

NCSO embraces this approach to development. Much of the literature on norms in global affairs focuses on power (Nye, 2005) and how norms can be sources of power in foreign policy (Häbel & Hakala, 2021; Koff, 2020). Norms are often considered to be strategic rhetorical commitments rather than tools for transformative change (see Šehović, 2019), leading to ineffective or insufficient implementation (Nhengu, 2020). NCSO argues that norms must be mainstreamed, including implementation within and across policy spheres in order to foster transformative development as defined in the SDGs (Koff & Häbel, 2022). Moreover, scholars such as Kauffer and Maganda (2022) have indicated that NCSO depends on the vertical appropriation of norms by stakeholders in domestic contexts. Consequently, much of the literature on sustainable development and normative coherence focuses on the operationalization of this paradigm.

2.2 | Operationalization of NCSO

Numerous scholars, such as Nilsson et al. (2018) and Collste et al. (2017) have recognized that the 2030 Sustainable Development Agenda has prioritized policy interactions as much as policy implementation in the field of development cooperation. Moreover, strategic partnerships adopted within the framework of the 2030 Agenda

have introduced further complexity into development policy-making (Graham & Graham, 2019). Such complexity has prioritized the position of tradeoffs and synergies in policy logics.

These tradeoffs are highlighted by numerous studies on development and environmental governance in domestic contexts. Ylönen and Salmivaara (2021) have shown how traditional sectoral divisions between development and environmental governance remain marked in Finland. In response to such incoherences, many domestic studies have focused on the promotion of transformative development through mechanisms targeting policy interactions. For example, Kirsop-Taylor and Hejnovic (2020) have advocated for hybrid agencies which are problem-oriented rather than sector-specific with the aim of effectively addressing multidimensional issues, such as climate change. Kirschke and Kosow (2021) focus on participatory approaches to the formulation of community-based policy mixes that address wicked problems in environmental governance. Many scholars have also studied policy design and the need to integrate complexity into sustainability strategies to promote coherence. For example, Kosow et al. (2022) have forwarded a new methodology using cross-impact balances (CIB), a qualitative network analysis that aims to eradicate internal and external contradictions within and between policy mixes. They applied this methodology to water basin management in Peru. Wiedemann and Ingold (2021) recognize that effective environmental regulation needs to be both source-directed and cross-sectoral in nature. Their analysis of pesticide regulation in Costa Rica integrates both substantive policy instruments and institutional performance (legislation). The analysis, which examined formulation of objectives, target group integration, coordination and policy instrument types, indicated that source directed policy instruments were effective in water and health but that cross-sectoral performance in terms of legislation was limited.

These approaches are, in fact, very useful for the promotion of PCSD. However, as stated above, NCSO prioritizes transversal normative commitments in the field of sustainable development which is less about problem-solving and more focused on the promotion of normative visions for development. Sheehy and Feaver (2015) recognize that all regulatory systems have both positive and normative dimensions. The positive dimension addresses the implementation of policy choices. The normative dimension affects the overall design of the regulatory system. These authors correctly argue that a normative regulatory framework that is incoherent will ultimately fail because the resulting policies and practices will undermine each other, leading to wasted resources and, more importantly, failure to achieve the intended governance objectives. This position reflects that of Brand et al. (2021) who contend that the fundamentally incompatible political interests which shape global development cannot be managed away.

Sheehy and Feaver (2015) provide an important approach to normative coherence in legal systems. First and foremost, they recognize coherence as a relational quality. According to the authors: "As a relational quality, coherence has been referred to as a property that emerges when the linkages between both similar and distinct classes of legal concepts (norms, principles, values or 'units of analysis') align



conceptually with minimal friction or logical inconsistency.” (Sheehy & Feaver, 2015, p. 397).

The emerging literature on NCSD has adopted alignment as the key indicator for normative coherence. Koff and Maganda (2016) illustrated how the European Union failed to integrate the language of the Human Right to Water and Sanitation (HRWS) into its development cooperation programs, indicating normative incoherence which negatively affected development investment impacts. In her examination of EU development cooperation implementation in Vietnam, Häbel showed how separate policy communities defined key norms such as sustainability differently, thus undermining their implementation as development program objectives. More recent scholarship has operationalized this relational quality more clearly. Kauffer and Maganda (2022) have studied the integration of HRWS and Integrated Water Resources Management (IWRM) in Central American regional water policies and the regulatory framework for water in six Central American states (water laws, policies and programs). They showed how regional water frameworks adopted these norms but national regulatory frameworks did not align due to stakeholder resistance. Similarly, Häbel et al. (2022) examined the development policy frameworks of the Association of Southeast Asian Nations (ASEAN) and found that gender and migration were only addressed in ASEAN's Cultural Community (they are not aligned in the Political Community nor the Economic Community), thus undermining important ASEAN legislation on the protection of women and migrants (Häbel et al., 2022). The present article adopts this conceptual approach in its analysis of NCSD. The methodology presented here aims to further refine research on NCSD and make it more effective as an evaluation tool.

3 | METHODOLOGY

Thus far, NCSD has emerged as an important critique of public policies and how they often undermine sustainable development through non-alignment with normative goals. While NCSD has made important political and conceptual impacts, it has not yet been thoroughly operationalized. In general, NCSD has been applied to the positive dimension of development frameworks referenced above without necessarily being used to address the normative dimension (Sheehy & Feaver, 2015). This article aims to address the normative dimension of sustainability by proposing a methodological approach for implementing NCSD as an evaluation methodology.

3.1 | Normative coherence for sustainable development: a methodological approach

The NCSD studies cited above examined legal and policy concepts (laws, regulations, policies, programs) in relation to their alignment with international principles. This article builds on this approach. It utilizes scaling to refine the examination of alignment, establishing levels of coherence which aim to make NCSD a more precise evaluation tool, thus increasing its utility in sustainable development debates.

For the purposes of this study, norms are defined as values, such as sustainable development, that have been codified through legal documents, such as international/regional treaties or national laws. Values refer to a system of beliefs or assumptions that guide actors' behaviors (Aasen & Vatn, 2018). Sustainable development will be defined through the approach promoted by the 2030 Agenda, which includes economic viability, social equity, environmental conservation and human security dimensions (Challenger et al., 2018; United Nations, 2015). Despite the fact that security is not traditionally considered a dimension within the SDGs or the 2030 Agenda, this project includes it for two reasons. First, “securitization” of sustainability is increasingly occurring at the supranational and domestic levels. Recent studies (Galán Castro et al., 2021; Häbel & Hakala, 2021) have shown how securitization processes, which define traditionally non-security issues in security terms, undermine sustainability strategies. Second, security is a priority issue in Mexico where drug-related violence, organized crime and femicides have dominated the political agenda for over a decade (Yanes Pérez et al., 2020). Insecurity is so prominent that it cannot simply be integrated elsewhere in Mexican sustainability discussions as it is a priority policy sector.

Normative coherence refers to mutually reinforcing relationships between laws and values. Legal scholars, such as Ghosh (2016) recognize such coherence through the presence of direct judicial referencing. Because most national legal frameworks were established before passage of the SDGs in 2015, direct references to the 2030 Agenda are not always present in national legal contexts. For this reason, this article examines normative coherence through the prism of relationships between laws and each dimension of sustainability: economic, social, security and environmental. The analysis of each law questions whether it promotes, undermines or has no impact on sustainability within each specific dimension.

3.2 | Data collection

The data collected for this article comes from a qualitative examination of 90 laws. The research team selected 36 laws related to each dimension of sustainability included in the study at the federal level in Mexico (nine per dimension) as well as 28 state laws from Aguascalientes (seven per dimension) and 26 from Veracruz (six for economic and security dimensions; seven for social and environmental dimensions). The number of laws per dimension were controlled in order to limit as much as possible any potential bias created by over/under-representation. Individual laws were assigned to specific dimensions based on their titles and preliminary readings of the headers and objectives. Each state law chosen for the study corresponds to a federal law, as Mexican state laws derive from federal legislation (each state is free to define its own laws within the federal framework). The number of state laws is lower than the number of federal laws and slightly unequal because some recent federal legislation has not yet been incorporated at state level. Two states were included in this study in order to compare horizontally at the sub-national level.

Only a limited number of laws have recently been passed in Mexico, so most legislation predates the SDGs. Many laws have not been reformed recently, since this requires a six-step process which does not ensure that any such initiative is accepted. Moreover, only a few laws have been reformed to include international sustainable development norms, and most regard environmental sustainability since “sustainability” has been associated with the environment since its inception in Mexico. Consequently, the decision was made to work with existing laws, regardless of their age or specific reference to “sustainability.” Because most of the laws were created prior to the establishment of the SDG's, this research does not study the direct impact of the SDGs on Mexico's legal framework but it examines the commitment to sustainability, broadly defined in this framework.

Selection of the laws included in the study was based on the following criteria: (1) Ascertainment that the law was closely related to the sustainability dimension to which it was assigned via a preliminary review to ensure that the objective of the law explicitly mentioned specific social, environmental, economic or security aspects (the title of a law does not always correspond to the dimension, even though its content does), (2) As stated above, in Mexico only some laws with recent reforms mention sustainable development or sustainability explicitly in their articles. For this reason, the preliminary review of Mexican legislation was based on keywords (included in a previously discussed and established bag of words) which guided the selection of laws, and (3) An attempt was made to ensure balance between the four sustainability dimensions so as to analyze the same number of laws per dimension (at both federal and state levels). This entailed including some laws that have been recently created or reformed, and which incorporate references to sustainability (e.g., in the environmental and economic dimensions) and others that do not (social and security dimensions). All five members of the research team examined the laws included in the study.

3.3 | Data analysis

The first phase of analysis involved defining the criteria for understanding the relationship between laws and each dimension of sustainability, which are illustrated below in Figure 1. As this figure shows, three characteristics were utilized to guide the research. The team investigated whether laws have integral or partially integral relationships with each dimension of sustainability, whether they directly or indirectly affect sustainability and whether the commitment to sustainability is intentional or unintentional. NCS is viewed as relationships that reinforce legal commitments to an individual dimension of sustainability, whereas normative incoherences for sustainable development examine relationships that undermine such commitments. The magnitude of coherence/incoherence (depending on the reinforcing or undermining relationship) is conceptualized as a series of steps: first focusing on integrality (the two innermost circles in figure one after “0” which address magnitude of impact), then incorporating directness (the second and third innermost circles after “0” which indicate how direct the coherence/incoherence is with sustainability)

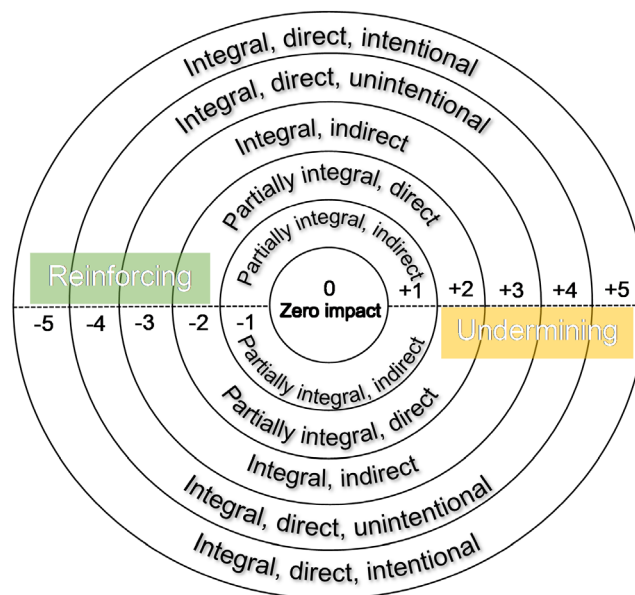


FIGURE 1 Spheres of in (coherence). Source: Figure drawn by authors [Color figure can be viewed at wileyonlinelibrary.com]

and finally addressing intention (the two outer circles in Figure 1), which is more relevant to the issue of incoherence as virtually all coherences are intentional (unintentional incoherence is accidentally caused, for example by improper wording in laws that create unintended consequences). When an impacting relationship does exist (not “0”), normative coherence/incoherence is weakest when the relationship between a law and sustainability in a dimension is partially integral and indirect (innermost circle in Figure 1 after “0”). Coherence/incoherence for sustainable development is strongest when a law displays an integral, direct and intentional relationship to sustainability in a dimension (outermost circle in Figure 1).

Based on this logic, a scale was established that derives from research conducted by Nilsson et al. (2018) on tradeoffs between the SDGs, and Koff et al. (2020) on the operationalization of PCD. Figure 1 incorporates the scale which is explained in Table 2.

Upon completion of the conceptualization stage and the establishment of the scale for measurement of NCS, the research team then met regularly and discussed each value assigned to each law in relation to each dimension of sustainability included in the study in order to mitigate subjectivity as much as possible. Following interactive discussions of each legal text, a consensus was reached for each value assigned to each law (see Appendix A, Tables A1–A3). For example, Mexico's Federal Law on Economic Competition (Ley Federal de competencia económica) actually undermines sustainability due to the presence of definitions for cooperatives and small enterprises which are not coherent with economic sustainability because they include bigger businesses (–4). Moreover, the law is not coherent with social sustainability because it privileges large companies, undermining the well-being of small-business entrepreneurs (–4). At the same time, the law



TABLE 2 Scale for measurement of normative coherence for development

Interaction	Name	Explanation
+5	Indivisible	Integral, direct, and intentional mutual reinforcement
+4	Reinforcing	Integral and direct mutual reinforcement
+3	Partially Reinforcing	Integral and indirect mutual reinforcement
+2	Facilitating	Partially integral and direct mutual reinforcement
+1	Enabling	Partially integral and indirect mutual reinforcement
0	Consistent	No significant positive or negative interactions.
-1	Constraining	Partially integral and indirect tradeoffs
-2	Limiting	Partially integral and direct tradeoffs
-3	Partially counteracting	Integral and indirect tradeoffs
-4	Counteracting	Integral and direct tradeoffs
-5	Canceling	Integral, direct and intentional tradeoffs

Source: Adapted from Nilsson et al. (2018) and Koff et al. (2020).

indirectly enables sustainable security because it provides transparent rules for economic competition, thus reducing opportunities for illicit practices, even though the law does not directly address security issues (+1). It does not affect environmental sustainability meaningfully, either in a positive or a negative way (0) leading to an overall NCS score of -7, indicating normative incoherence for sustainable development. Conversely, the General Law on ecological balance and protection of the environment (Ley General del equilibrio ecológico y la protección al ambiente) is characterized by maximum +5 scores in each dimension because it focuses on environmental protection within the framework of sustainable economic markets, social protection and socio-ecological security which accumulates a perfect NCS score of +20.

The laws were then grouped according to polity and dimension of sustainability and the research team added the individual scores for each law to establish NCS aggregate scores (see empirical tables below) revealing trends. Mean values were then calculated for each grouping of laws in order to measure transversality. A grouping with a higher mean indicates greater coherence for sustainability in other dimensions.

Through scaling, the research team can examine the coherence between individual laws and normative dimensions of sustainability rather than coherence between laws. In doing so, this research operationalizes NCS by emphasizing sustainability as a normative objective rather than studying general coherence between laws, thus highlighting the value of sustainable development as a guiding principle for governance.

3.4 | Data validation

The proposed methodology aims to highlight important trends regarding NCS in the Mexican legislative framework. As interpretation of these trends can differ, this research approach integrated a data validation process. The research team identified 60 recognized experts on sustainable development in Mexico, including former public officials, representatives of non-governmental organizations, journalists, documentarians, lawyers, consultants and scholars. The professional fields of these experts is varied as much as possible to limit the possibility of selection bias. These experts held previous knowledge of PCD before contact with the research team. The team then sent a questionnaire to the experts including the tables and figures presented above and seven questions (see Appendix B). The team received 24 completed questionnaires from this pool of experts, only one of which cast doubt on the validity of the findings presented above. All respondents answered the seven questions presented to them. In order to limit potential bias from the structure of choices presented, experts were offered the opportunity to formulate their own answers to specific questions and most of them did so at least one time. For this reason, some of the questions received more than 24 responses (question one received 29) because respondents chose two or more of the hypotheses presented. The research team accepted and tabulated multiple responses.

3.5 | Limitations of the study

The proposed originality of this study is the systematic evaluation of legal frameworks through NCS analysis. The assignment of a value to each law as an indicator of NCS for each dimension of sustainable development is the result of detailed revision of each piece of legislation studied. Originally, the research team hoped to automate this process through computer-driven data analysis of a much larger set of legal texts. Unfortunately, the development of this process could not be completed to a satisfactory standard within the limited time frame. The research team was obliged to undertake the analysis manually, which significantly limited the number of texts examined. Nonetheless, a critical mass of laws was reviewed in order to test hypotheses and generalize findings.

Another limitation of the study regards the extension of the scales established for research. The use of classifications and scaling techniques reduces the relationship between laws and dimensions of sustainable development to a single indicator. This facilitates comparison and generalization but many nuances are lost through this approach in relation to qualitative research focused on the content of specific laws. While this type of qualitative research is rich in detailed analysis of texts and allows for different interpretations of the law, it limits generalization because of the limited number of cases that can be examined through such methods.

For these reasons, this research adopts a meso-level approach that is facilitated by the comparative method. It is based on qualitative research which includes interpretation and detailed reviews of texts.

At the same time, the establishment of sustainable development categories by dimension and the proposed scales aiming to indicate normative commitments to sustainability within each dimension, facilitate systematic comparison and generalization. The proposed originality of this study is above all methodological because it attempts to operationalize comparative normative analysis in relation to sustainable development, upon which broader future research can be based. Above all, the quantification of this approach could be an avenue for future research and remains an objective for the research team.

Finally, as previously mentioned, most laws in Mexico were passed before the establishment of the SDGs so this approach cannot directly examine the impact of the SDGs on national legislation. This would be a subject for future research, or the study of different countries where recent legislative reform related to sustainability is more prevalent.

3.6 | Research design

This research is part of a larger project funded by Mexico's Consejo Nacional de Ciencia y Tecnología, entitled "Integralidad GAMMA" (I-GAMMA) which focuses on promoting integrality in the environmental management of development, using massive data and machine learning techniques. I-GAMMA integrates an interdisciplinary team of researchers from five different institutes in Mexico and two abroad, in research on sustainability in the country. This research focuses on Mexico because it is a component of I-GAMMA.

Mexico can be considered a representative case for implementation of transformative development. Like many countries, Mexico has ratified important international environmental treaties, providing it with a strong normative framework for sustainable development and environmental management. Mexico's constitutional architecture directly addresses sustainability, as the Mexican Constitution (article 4, paragraph 5) states, "Every person has the right to a healthy environment for her development and well-being. The State must guarantee respect for this right." (Hernández-Huerta et al., 2018, p. 3). Furthermore, international treaties, once they are signed by the President and ratified by the Senate gain quasi-constitutional significance (Mumme, 2019) so no state or municipal law should contradict legal commitments undertaken through these treaties, thus linking the global sustainability framework to domestic policies at different levels of governance.

At the same time, Mexico has signed more free trade agreements (13) than any other country. It is a member of the US-Mexico-Canada (USMCA) Free Trade Agreement (formerly the North American Free Trade Agreement [NAFTA]), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, the Pacific Alliance and it has established free trade agreements with the European Union, Central American countries and many South American states. These agreements and associated trade practices have undermined environmental and social sustainability pursued through Mexico's international commitments to sustainable development. Mexico's gross domestic product has grown from USD 323 billion in 1992 when

NAFTA was signed to USD 1.269 trillion in 2019 (World Bank, 2021). At the same time, poverty remains widespread as more than 42% of the population lives in poverty, representing more than 52 million people (Statista, 2021).

At the state level, this study includes Aguascalientes and Veracruz which represent highly contrasting cases. Even though both states are characterized by legal frameworks that correspond to federal legislation, they approach sustainability differently. Veracruz tends to implement laws that utilize more specific language regarding sustainability whereas legislation in Aguascalientes is more general, thus providing more opportunity for interpretation.

Mexico can also be considered a critical case for the study of PCD because the country has already formally adopted PCD within its governance frameworks. In its 2018 presentation of country profiles on the implementation of PCD, the OECD notes that "An explicit commitment of the State towards the 2030 Agenda, backed by an implementation strategy, provides the basis for aligning efforts at federal, state and municipal levels." (OECD, 2018, p. 25). The report specifically applauds Mexico for two commitments: "(1) Leadership at the highest level is helping to lay institutional foundations to ensure that commitment towards the 2030 Agenda transcends government administrations and (2) National planning and budgetary processes provide essential tools for policy integration and coherence" (OECD, 2018, p. 26). These points indicate strong normative commitments to PCD and formal mainstreaming in the country's policy architecture.

At the state level, the two cases also differ in relation to PCD. Like the federal government, the State of Veracruz has formally committed to PCSD. It was the first Mexican state to establish its own Plan for Sustainable Development and it is the first to found both a Council for the 2030 Agenda and a Network of Municipalities for the Application of the SDGs (Secretaría de Finanzas y Planeación, 2017). Aguascalientes has not yet established such commitments.

4 | FINDINGS: NCS D IN MEXICO

The empirical analysis conducted through this study highlights clear trends related to NCS D in Mexico's legislative framework. The results of the study are presented in the following tables and figures.

Table 3 presents the NCS D scores for Mexican federal legislation (general and federal laws), Veracruz and Aguascalientes. In general, the table indicates that the federal legislative framework (393) is more coherent normatively with sustainable development than are the states included in this study (321 for Veracruz and 308 for Aguascalientes).

What is most interesting in this data is that the mean NCS D scores are highest for the social dimension and lowest for the environmental dimension, indicating a clear prioritization of social sustainability in Mexican legislation at the federal and state levels and an equally clear de-prioritization of environmental sustainability (a "de-greening" of sustainability). Security sustainability and economic sustainability represent intermediate values, which is somewhat surprising given



TABLE 3 Normative coherence for sustainable development in Mexico: The national framework compared to two states (Aguascalientes and Veracruz)

Dimension of sustainable development	General and federal laws	Aguascalientes	Veracruz	Mean
Economic	89	83	71	81
Social	124	99	106	109.6667
Security	113	82	85	93.33333
Environmental	67	44	59	56.66667
	393	308	321	

Source: Table compiled by authors.

that Mexico is committed to free trade internationally (above all through the USMCA) and security domestically, as mentioned above.

Figure 2 also shows almost identical tendencies concerning NCSO by dimension at both the federal and state levels of government. In all three polities examined, the laws analyzed were by far the most normatively coherent for social sustainable development followed by the security dimension, the economic dimension and the environmental dimension. These trends indicate that states closely follow federal laws in their own legislation.

In addition to examining how normatively coherent Mexico's legislative framework is with different dimensions of sustainable development, this study also analyzed groupings of laws and studied how normatively coherent they are with other dimensions of sustainability. In doing so, the research questions the transversality of these laws, which is often used as an indicator of "mainstreaming" in academic discussions (see Squires, 2005). According to this logic, should an individual law be normatively coherent with sustainable development, then it would contribute to sustainability in all dimensions, not just its own. Table 4 shows that environmental laws in Mexico are characterized by the highest levels of transversality at the federal (145) and state levels (131 for Veracruz and 92 for Aguascalientes). This means that environmental legislation in Mexico is the most normatively coherent with attempts to mainstream sustainability. Conversely, the lowest NCSO scores are found amongst social laws at the national level and economic laws at the state level of government. This indicates the presence of sector specific legislation which is considered counterproductive to mainstreaming and the establishment of NCSO (see Figure 3).

These trends also highlight an important NCSO paradox in the Mexican legislative framework. Whereas the social dimension of sustainable development is prioritized in Mexican law and the environmental dimension seems to be deprioritized, it is the environmental grouping of laws which indicates the highest levels of transversality/mainstreaming, whereas social laws and economic laws are most sector-specific in nature. This seeming paradox was the basis of the survey sent to sustainability experts in Mexico.

4.1 | Expert interviews

Data validation is very important for this project because the research team identified competing explanations for the trends presented

above. These potential explanations were presented as hypotheses to the group of experts who were asked to choose one for each question or supply their own explanation. Each question included a legal/institutional hypothesis, a political one (defined in terms of the Mexican political system) and an ideological one (see Appendix B). The responses to these questions guided the NCSO analysis of laws in Mexico.

The first question posed to our group of experts asked them to explain why the Mexican federal legal framework seems to be more normatively coherent than the legal frameworks at the state level. The overwhelming majority of respondents (16) chose the following legal/institutional explanation for this result: "Mexican federal legislation in general is more normatively coherent than state legislation due to the presence of legislative commissions and other legislative resources, such as expert panels." Only two respondents chose a competing political explanation and two chose an ideological one. Nine respondents either chose to present their own explanations or further clarify their choices above.

Responses to the second question presented a similar pattern. Respondents were asked why the distribution of NCSO scores across the four dimensions in the legal frameworks of Aguascalientes and Veracruz coincided almost identically with the distribution at the federal level. Again, 16 respondents chose a legal/institutional explanation ("State laws closely align with federal laws in the Mexican legal system") compared to four who selected a political hypothesis, three who believed that this is explained ideologically and three who provided their own explanation. The predominance of legal/institutional perspectives amongst responses to these two questions confirm the importance of understanding NCSO within the framework of Mexico's constitutional commitments to international treaties. As mentioned above, these treaties adopt quasi-constitutional standing once they are ratified, and they are formally transcribed into law at all levels of government. This finding is, in fact, confirmed by answers to the question asking for explanation of the transversal nature of Mexico's environmental laws. This grouping of laws is characterized by the highest amount of normative coherence across the four dimensions of sustainable development included in this study. Seventeen of the 24 respondents selected the following legal/institutional explanation for this result: "Environmental legislation follows Mexico's commitments to international treaties/agreements on sustainable development, which are transversal in nature." Only two respondents

FIGURE 2 Normative coherence for sustainable development in Mexico: National legislation compared to two states (Aguascalientes and Veracruz). Source: Figure established by authors [Color figure can be viewed at wileyonlinelibrary.com]

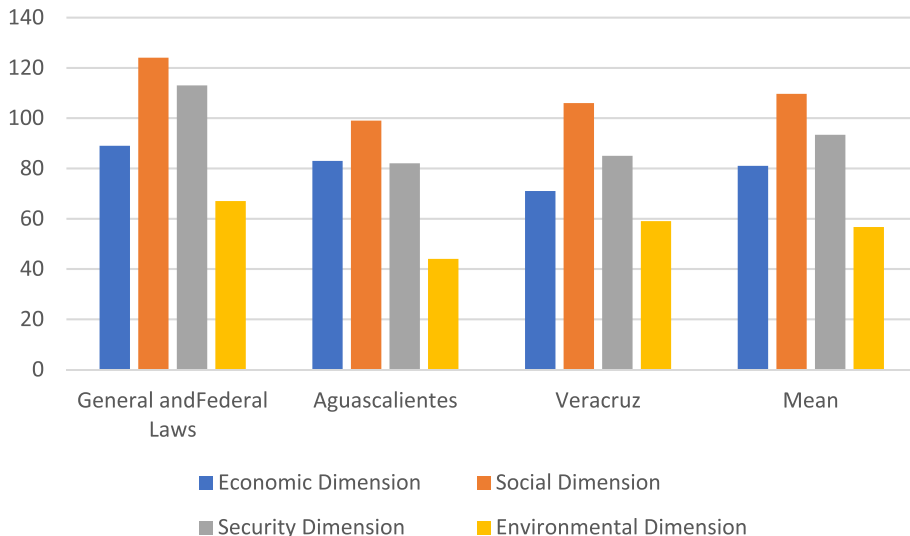
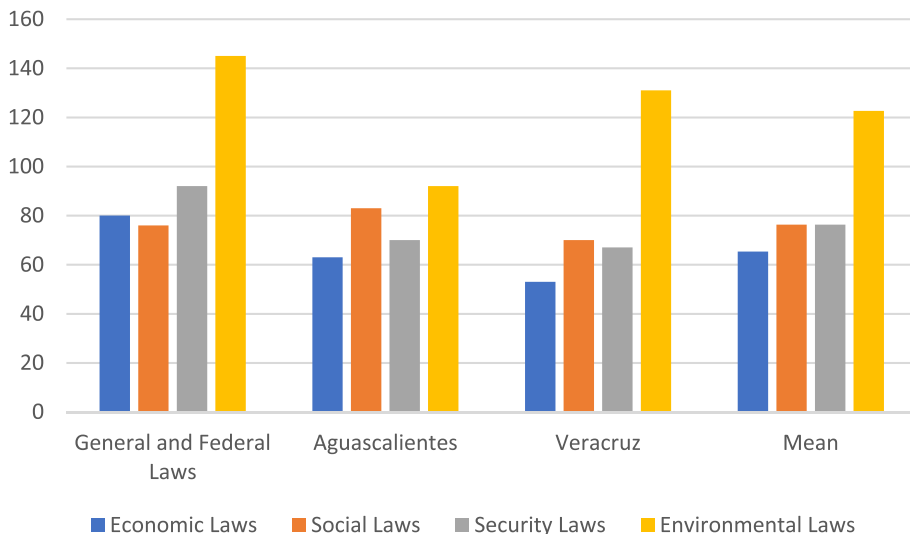


TABLE 4 Normative coherence for sustainable development amongst economic, social, security and environmental laws: The national context compared with two states (Aguascalientes and Veracruz)

	General and federal laws	Aguascalientes	Veracruz	Mean
Economic laws	80	63	53	65.33333
Social laws	76	83	70	76.33333
Security laws	92	70	67	76.33333
Environmental laws	145	92	131	122.6667

Source: Table compiled by authors.

FIGURE 3 Normative coherence for sustainable development amongst economic, social, security and environmental laws: National legislation compared to two states (Aguascalientes and Veracruz). Source: Figure established by authors [Color figure can be viewed at wileyonlinelibrary.com]



selected a political hypothesis, five chose an ideological one and two provided alternative explanations.

Interestingly, legal/institutional explanations were not highlighted in response to questions focusing on the prioritization of dimensions of sustainable development in Mexico's legislative framework. When asked to explain why the social dimension of sustainable development is prioritized in both federal and state legislation, followed by the security, economic and environmental dimension, in that order, only eight respondents selected a legal/institutional hypothesis ("These trends follow the historical evolution of sustainability in Mexican legal

frameworks") whereas 12 selected a political explanation ("These trends reflect the interests of political representatives and parties within the Mexican political system"), three an ideological one and three provided alternative explanations. Similarly, when asked why the environmental dimension of sustainable development lagged behind the other dimensions, 11 respondents selected a political explanation ("Political representatives and political parties have not promoted environmental sustainability as much as they have done with other dimensions of sustainability. As a consequence, environmental concerns are independently promoted by civil society."), nine



chose an ideological one (“The Mexican sustainable development model de-prioritizes the environmental dimension for the sake of promoting socio-economic integration.”) and only four selected a legal/institutional hypothesis. Three respondents provided alternative explanations.

Expert opinions were divided over NCSO results in the economic and social dimensions. When asked to explain why NCSO scores were relatively low for the economic dimension at both the federal and state levels, there was a relatively even distribution of responses across the different proposed explanations: five respondents agreed that Mexico's legal commitment within the international framework of free trade agreements, such as NAFTA/USMCA, promotes economic growth instead of sustainability (legal/institutional explanation); seven attributed this finding to the influence of globalized companies (foreign and domestic) in the Mexican political system (political explanation); seven experts chose an ideological explanation (“Mexico's historical commitment to market-based development rather than sustainable development”) and eight provided alternative explanations. Similarly, opinions were divided amongst experts when asked why economic legislation is more normatively coherent with the four dimensions of sustainability than social legislation at the federal level but social laws are more transversal than economic laws at the state level. Eleven respondents indicated that “Federal economic legislation establishes a more transversal legal framework in response to national commitments to international treaties, while state laws focus on more specific/local economic issues” (legal/institutional explanation). Ten respondents selected an ideological explanation: “Economic sustainability is a national issue by nature, while social sustainability depends on the specificities of each state.” Only four experts chose a political hypothesis and one presented an alternative hypothesis.

5 | DISCUSSION: NORMATIVE MAINSTREAMING AS A KEY TO “GREENING” SUSTAINABLE DEVELOPMENT

The collective responses provided by the experts surveyed offer interesting lessons concerning the legal framework for sustainable development in Mexico. First, they indicate that international treaties matter. Many observers of international debates on sustainable development have discussed how international organizations have not been able to surpass summity in their contributions to sustainability (see Desai et al., 2018). The emerging field of normative coherence for development has indicated that discourse matters as it can affect policy. de Jong and Vijge (2021) have shown how the shift in language from the Millennium Development Goals to the SDGs re-focused Dutch development cooperation towards transformative policy objectives. This study indicates that Mexico's legislative framework is heavily influenced by the country's normative commitments to international treaties.

Second, domestic legislation results from normative coherence to competing frameworks. The global sustainable development agenda has emerged simultaneously with regional free trade expansion.

Mexico, like other emerging economies, committed to free trade in order to diversify its economy and “modernize” the country (Gerber, 2020). The national wealth that this created has been documented above. Development, however, has been accompanied by increasing social divisions, widespread violence and territorial inequities (Pardo Montaña & Dávila Cervantes, 2020; Yanes Pérez et al., 2020). In order to address these challenges, Mexico's legislative framework focuses heavily on the social dimension of sustainable development. However, path dependency has limited the normative coherence of social sustainability laws which neglect environmental considerations. This is evidenced by the fact that they lack transversality. In order to promote transformative change such as that pursued through the 2030 Sustainable Development Agenda, sustainability frameworks need to be mainstreamed, which is currently not the case due to the existence of competing points of reference.

In fact, these differing reference points impact sustainability systems at different levels. The economic dimension of sustainability as written into Mexican law, has been affected at the national level by both Mexico's international commitments to free trade and the political influence of globalized companies. The social dimension of sustainable development has been privileged at the sub-national level because state laws incorporate considerations based on the socio-economic dynamics of specific state systems.

Despite Mexico's adherence to global environmental treaties, the environmental dimension lags at both the federal and state levels, indicating that there is no “space” for it to emerge. In fact, studies of environmental impact assessment (Koff, 2021), water basin governance (Cortez-Lara et al., 2019) and waste management (Larsson, 2018) have indicated that Mexico's system of environmental governance is both reactive and based on local concerns raised at the municipal level which is weakest in Mexico. Environmental issues are often viewed as barriers to development and they are not normatively incorporated sufficiently into the country's development model (Hernández-Huerta et al., 2018). Consequently, Mexico's environmental laws reflect the transversality of international environmental treaties. However, the environmental dimension is the least normatively coherent one in the Mexican legislative framework because it is the least developed dimension in social, economic and security laws. Multiple expert opinions indicating that environmental sustainability is pursued mostly by civil society outside the formal Mexican political system confirms the weakness of environmental governance in Mexico's sustainable development system.

It is noteworthy that a recent evaluation of 128 of Mexico's federal laws, by a team comprising both academic experts and federal legislators, with the aim of finding “areas of opportunity” to improve the coherence of legislation for the express purpose of implementing the SDG's, also contended that the environmental dimension of sustainability was “scarcely present” in national legislation (Cámara de Diputados, 2020). That evaluation supports the findings of the research presented here, indicating that Mexico's laws are not “green” in their approach to sustainable development.

Both the findings presented above, and the evaluation of federal laws conducted by legislators, highlight two fundamental issues that

need to be addressed for Mexican sustainable development strategies to become greener. First, “sustainability” cannot be limited to environmental legislation. Mainstreaming requires important shifts in legislation found in the economic, social and security dimensions. Khan et al. (2021) illustrate how mainstreaming has been integrated in Nordic economic frameworks through legislation that introduces key “greening” concepts such as low-carbon development, promotion of environmental technology sectors, and enhanced circularity in the economy. Similarly, Runhaar et al. (2014) discuss Environmental Policy Integration (EPI) which refers to the incorporation of environmental concerns in non-environmental policy sectors. EPI aims to avoid conflicts between environmental and other policy objectives and to enhance environmental policy by directly targeting the driving forces of environmental degradation in other sectors. A related tool is biodiversity integration (Zinngrebe, 2018) which similarly examines the coherence of non-environmental policy sectors with biodiversity conservation. Finally, scholars of climate action, such as Braunschweiger and Pütz (2020) have advocated for the incorporation of climate action perspectives in social integration strategies.

Such approaches are far from the Mexican reality. One of the first articles on policy coherence in Mexico, by Cejudo and Michel (2016), showed how even well-designed and implemented policies do not necessarily foment coherent and self-reinforcing policy frameworks. In fact, this study showed that complementarity is weak in the Mexican policy system. This situation has been exacerbated by the current government which is implementing a national development plan that focuses on economic development, social integration, and improvement of governance with virtually no mention of the environment (Secretaría de Gobernación, 2019). An illustrative example is the 2021 energy law, which promotes fossil fuels and centralized state regulation of the energy sector. The combination of these factors has significantly limited opportunity structures for sustainability stakeholders.

In fact, the second issue highlighted by this article's findings regards the relevance of law for sustainability discussions. Of course, law regulates behavior but it also prioritizes and codifies values. The literature review above highlighted how the normative dimension of law provides the foundation for the positive dimension to which policy coherence for sustainable development has generally been applied. Scholars such as Akerboom and Craig (2022) have documented how law structures public participation in sustainable development debates. This normative dimension is diffused throughout environmental governance systems. For example, Koff (2021) not only documented incoherences for sustainability related to environmental impact assessment (EIA) in Mexico, but his research also indicated how EIA undermines the quality of democratic discussions on sustainability because procedural issues structure environmental debates through adversarial relationships pitting government against civil society. Consequently, NCS is vital for the promotion of transformative sustainable development because it addresses both regulatory and participative normative frameworks, both of which are essential for the “greening” of sustainable development in all of its dimensions.

6 | CONCLUSIONS

The 2030 Agenda recognizes that development in one policy sector or one geographic region affects development in other sectors and regions. For this reason, PCSD has been introduced as an important mechanism to reinforce synergies and reduce tradeoffs. Within this context, sustainable development strategies have prioritized mainstreaming through which environmental issues need to be addressed in non-environmental policy arenas.

While mainstreaming remains popular in development discourse, especially in climate change discussions, it is often limited by legal frameworks for development strategies and environmental regulation. Both policy-oriented (OECD, 2021) and scientific (Bossuyt et al., 2020) research indicates that policy silos still predominate in both sectors. These approaches are firmly embedded in national legislative frameworks. Recent scholarship on PCSD has recognized and attempted to address this issue. The most provocative analysis of this situation has been provided by Brand et al. (2021) who contend that PCSD can only be achieved through problem-driven frameworks aiming to promote coherence in settings where fundamental inconsistencies are likely to persist over time. They argue that future research and policy debates should focus on navigating political trade-offs and hierarchies while confronting the longer-term goal conflicts that reproduce unsustainable policy choices.

This approach merits serious consideration. The most relevant question that it raises asks, why are unsustainable policy choices reproduced through development strategies? NCS directly addresses this problem. Rather than focusing on “coherence”, NCS addresses the question “coherence for what?” (and “coherence for whom?”). It directly engages the definition of development priorities and questions why environmental issues continue to lag behind socio-economic objectives.

This study highlights the existence of a number of factors that contribute to unsustainable policy choices. First, it directly addresses a dimension of sustainability that is often overlooked in policy discussions: legislation. Most sustainability debates focus on the definition, implementation and impact of policies and programs. However, these instruments are embedded in systems of regulation that need to be explored more thoroughly in PCSD frameworks. NCS provides this ability to evaluate the normative foundation of policy-making.

Second, this study shows that policies and programs can integrate commitments to the 2030 Agenda swiftly but legislation changes more slowly, creating a lag in reform of development frameworks. The positive dimension of sustainability cannot successfully promote transformative development as long as the normative dimension remains fixed. Consequently, path dependency needs to be addressed urgently. In order to do so, the law should be viewed as a component of development and environmental governance systems. NCS studies should more thoroughly integrate legal frameworks (Koff, 2017). This study shows how environmental legislation in Mexico integrates social, economic and security dimensions. Conversely, social, economic and security legislation largely ignores the environmental dimension. This situation must be reversed for the establishment of



greener laws. Otherwise, sustainable development strategies will remain focused on socio-economic considerations and environmental measures will not be able to positively influence them.

Finally, this article underlines the need to focus more attention on evaluation. Rich policy-generated and scientific literatures have emerged on PCD/PCSD. Most of these studies incorporate policy definition, implementation and monitoring (impacts) in their objectives. Evaluation is less emphasized (Righettini & Lizzi, 2021). This study proposes an evaluation methodology for the normative dimension of regulation. It does not merely discuss how to evaluate legislative frameworks. Through completion of this exercise, this research underlines the need for more evaluation of the normative dimension of sustainable development governance in order to promote “greener” positive frameworks.

If transformative sustainable development such as that defined through the SDGs is to be achieved, then unsustainable policy choices need to be substituted with sustainable ones. This article attempts to open a path forward for the promotion of sustainable policies by qualitatively examining laws in four sustainability dimensions. Future research can build on this in many ways. First, comparative research would be most welcome. Mexico represents a case where the environmental dimension of sustainability is weak. It would be interesting to compare this to countries with stronger environmental dimensions of legislative frameworks. This could be further advanced by examining legislative processes in order to incorporate more fully their participative aspects. In line with the questionnaire distributed to sustainable development experts for this project, it would be interesting to understand why environmental dimensions of sustainable development are prioritized in some countries but neglected in others.

Future research in the field could also more fully implement a systemic application of NCSD. This article evaluated laws through NCSD analysis. Legal frameworks, of course, include different instruments. In the case of Mexico, laws are reinforced through a series of regulations and norms (minimum standards). Sustainable development discussions are characterized by significant criticisms of implementation. It is important to understand where legislative frameworks break down. Laws could be weak on environmental sustainability (as is the case in Mexico) but even well-defined laws could have little impact if other legal instruments are not appropriately designed. NCSD analysis could be applied systemically to address these questions. It could also be extended to judicial considerations as NCSD evaluation can be applied to judgments from tribunals as well.

Finally, this article proposes NCSD scales as a means to systematize evaluation. While the scaling presented here has been applied objectively, it nonetheless remains qualitative. As stated above, the I-GAMMA program is attempting to automatize NCSD evaluation through machine learning which should eventually permit the research team to quantify their analysis. This has been a challenge thus far. Given the recent prominence of data-driven decision-making in development strategies (van Ooijen et al., 2019) and use of machine learning for policy analysis (Ashrafian & Darzi, 2018), the quantification of NCSD would certainly help measure the distance between legislative

frameworks and environmental mainstreaming, thus reinforcing the normative dimension of sustainable development and the “greening” of policy choices.

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CONFLICT OF INTEREST

The authors confirm that they have no conflicts of interest to declare.

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APPENDIX A: Tables indicating normative coherence for sustainable development scores for selected Laws in Mexico (National, Aguascalientes, and Veracruz)

TABLE A1 NCSA analysis of selected Mexican General and Federal Laws (by dimension)

	Dimension	General and federal laws	Economic	Social	Security	Environmental	NCSA score
1	Economic	Ley General de sociedades mercantiles	+4	+1	+2	0	+7
2	Economic	Ley General de títulos y operaciones de crédito	+2	+1	+1	0	+4
3	Economic	Ley Federal de competencia económica	-4	-4	+1	0	-7
4	Economic	Ley Federal de presupuesto y responsabilidad hacendaria	+4	+5	+1	+4	+14
5	Economic	Ley Federal de derechos	+5	+5	+2	+5	+17
6	Economic	Ley Federal de deuda pública	+3	+1	0	0	+4
7	Economic	Ley Federal de zonas económicas especiales	+5	+5	+5	+5	+20
8	Economic	Ley Federal para el fomento de la microindustria y la actividad artesanal	+5	+5	0	0	+10
9	Economic	Ley de Comercio Exterior	+5	+2	+2	+2	+11
		Summary Economic Laws	+29	+21	+14	+16	+80
10	Social	Ley General de comunicación social	+1	+4	+2	+2	+9
11	Social	Ley General de cultura física y deporte	+2	+5	+5	+2	+14
12	Social	Ley Federal de consulta popular	0	+5	-2	0	+3
13	Social	Ley Federal del trabajo	+5	+5	+5	+2	+17
14	Social	Ley Federal de austeridad republicana	-4	-4	-2	-2	-12
15	Social	Ley Federal de los trabajadores al servicio del Estado, reglamentaria del apartado B) del artículo 123 constitucional	+2	+5	+5	0	+12
16	Social	Ley General de transparencia y acceso a la información pública	+1	+5	+5	+2	+13
17	Social	Ley Federal para prevenir y eliminar la discriminación	+1	+5	+2	0	+8
18	Social	Ley General de salud	0	+5	+2	+5	+12
		Summary social laws	+8	+35	+22	+11	+76
19	Security	Ley General del sistema nacional de seguridad pública	+2	+5	+5	0	+12
20	Security	Ley general de acceso de las mujeres libres de violencia	+2	+5	+5	0	+12
21	Security	Ley Federal contra la delincuencia organizada	+1	+2	+5	+2	+10
22	Security	Ley Federal de declaración especial de ausencia para personas desaparecidas	+1	+5	+5	0	+11
23	Security	Ley Federal de armas de fuego y explosivos	-1	0	+5	0	+4
24	Security	Ley Federal de protección de datos personales en posesión de los particulares	+2	+2	+5	0	+9
25	Security	Ley Federal para la prevención e identificación de operaciones con recursos de procedencia ilícita	+5	0	+5	0	+10
26	Security	Ley General de protección civil	+1	+5	+5	+2	+13
27	Security	Ley General del sistema nacional anticorrupción	+1	+5	+5	0	+11
		Summary of Security Laws	+14	+29	+45	+4	+92
28	Environmental	Ley General de pesca y acuicultura sustentables	+5	+5	+4	+5	+19
29	Environmental	Ley General de vida silvestre	+5	+5	+5	+5	+20
30	Environmental	Ley Federal de responsabilidad ambiental	+2	+2	+3	+4	+11
31	Environmental	Ley Federal de variedades vegetales	+1	+2	+1	+2	+6
32	Environmental	Ley General de cambio climático	+5	+5	+5	+5	+20
33	Environmental	Ley General de desarrollo forestal sustentable	+5	+5	+2	+5	+17

(Continues)

TABLE A1 (Continued)

Dimension	General and federal laws	Economic	Social	Security	Environmental	NCS score
34	Environmental Ley General del equilibrio ecológico y la protección al ambiente	+5	+5	+5	+5	+20
35	Environmental Ley General para la prevención y gestión integral de los residuos	+5	+5	+5	+5	+20
36	Environmental Ley de transición energética	+5	+5	+2	+5	+17
	Summary of environmental laws	+38	+39	+32	+36	+145
	Grand total	+89	+124	+113	+67	+393

Source: Table compiled by authors.

TABLE A2 NCS analysis of selected Aguascalientes Laws (by dimension)

Dimension	Law	Economic	Social	Security	Environmental	NCS score
1	Economic Ley de deuda pública y disciplina financiera del estado de Aguascalientes y sus municipios	+3	+1	+1	0	+5
5	Economic Ley para el fomento a la economía, la inversión y el empleo para el Estado de Aguascalientes	+5	+5	+1	+2	+13
9	Economic Ley de deuda pública y disciplina financiera del estado de Aguascalientes y sus municipios	+5	+1	+2	0	+8
13	Economic Ley de mejora regulatoria y gestión empresarial para el Estado de Aguascalientes	+5	+2	+2	+2	+11
17	Economic Ley de turismo del estado de Aguascalientes	+5	+5	+2	+5	+17
21	Economic Ley que regula las actividades de los agentes inmobiliarios en el estado de Aguascalientes	+2	0	+2	0	+4
25	Economic Ley de presupuesto, gasto público y responsabilidad hacendaria del estado de Aguascalientes y sus municipios	+3	+1	+1	0	+5
	Summary of economic laws	+28	+15	+11	+9	+63
6	Social Ley de Cultura del Estado de Aguascalientes	+5	+5	+1	0	+11
10	Social Ley de Desarrollo Social para el Estado de Aguascalientes	+5	+5	+1	+2	+13
14	Social Ley de educación del estado de Aguascalientes	+5	+5	+5	+5	+20
22	Social Ley de transparencia y acceso a la información pública del estado de Aguascalientes y sus municipios	+1	+2	+2	+2	+7
26	Social Ley para prevenir y erradicar la discriminación del estado de Aguascalientes	+1	+5	+2	0	+8
	Summary of social laws	+22	+32	+19	+10	+83
3	Security Ley de acceso de las mujeres a una vida libre de violencia	+2	+5	+5	0	+12
7	Security Ley del sistema estatal de Seguridad Pública de Aguascalientes	+1	+2	+5	0	+8
11	Security Ley de atención y protección a la víctima y al ofendido para el estado de Aguascalientes	+2	+5	+5	0	+12
15	Security Ley de prevención social de la violencia y la delincuencia con participación ciudadana del estado de Aguascalientes	+1	+5	+5	0	+11
19	Security Ley para Prevenir y Erradicar la Trata de Personas en el Estado de Aguascalientes	+2	+5	+5	0	+12
23	Security Ley de protección civil para el estado de Aguascalientes	+1	+2	+5	+2	+10
27	Security Ley para prevenir y erradicar la trata de personas en el estado de Aguascalientes	0	+3	+2	0	+5
	Summary of security laws	+9	+27	+32	+2	+70
4	Environmental Ley de Cambio Climático para el Estado de Aguascalientes	+5	+5	+5	+5	+20
8	Environmental Ley de Agua para el Estado de Aguascalientes	+5	+5	+2	+2	+14
12	Environmental Ley de fomento para el Desarrollo Forestal Sustentable del Estado de Aguascalientes	+5	+4	+5	+5	+19

TABLE A2 (Continued)

	Dimension	Law	Economic	Social	Security	Environmental	NCS score
16	Environmental	Ley de la procuraduría estatal de protección al ambiente, de estado de Aguascalientes	+1	+2	+2	+2	+7
20	Environmental	Ley de protección a los animales del estado de Aguascalientes	+2	+2	+2	+2	+8
24	Environmental	Ley de Protección ambiental para el estado de Aguascalientes	+5	+5	+3	+5	+18
28	Environmental	Ley de fomento para el uso de la bicicleta en el estado de Aguascalientes	+1	+2	+1	+2	+6
		Summary of environmental laws	+24	+25	+20	+23	+92
		Grand total	+83	+99	+82	+44	+308

Source: Table compiled by authors.

TABLE A3 NCS analysis of selected Veracruz Laws (by dimension)

	Dimension	Law	Economic	Social	Security	Environmental	NCS score
1	Economic	Ley de Fomento Económico para el Estado de Veracruz de Ignacio de la Llave	+5	+1	0	+5	+11
2	Economic	Ley de Austeridad para el Estado de Veracruz de Ignacio de la Llave	-4	-4	-2	-2	-12
3	Economic	Ley de Fomento al Empleo del Estado de Veracruz de Ignacio de la Llave.	+4	+5	0	0	+9
4	Economic	Ley de Bienes del Estado de Veracruz de Ignacio de la Llave	+2	+2	+2	+3	+9
5	Economic	Ley para el Establecimiento y Desarrollo de Zonas Económicas Especiales del Estado de Veracruz de Ignacio de la Llave	+5	+5	+1	+5	+16
6	Economic	Ley de Fomento a la Actividad Artesanal para el Estado de Veracruz de Ignacio de la Llave	+5	+5	+5	+5	+20
		Summary of economic laws	+17	+14	+6	+16	+53
7	Social	Ley del Sistema Estatal de Cultura Física y Deporte para el Estado de Veracruz de Ignacio de la Llave	+2	+5	+5	+1	+13
8	Social	Ley para el Desarrollo Cultural del Estado de Veracruz de Ignacio de la Llave	+4	+5	0	+1	+10
9	Social	Ley de Comunicación Social para el Estado de Veracruz de Ignacio de la Llave	+4	+4	+2	0	+10
10	Social	Ley de Referendo, Plebiscito e Iniciativa Popular	0	+5	-2	0	+3
11	Social	Ley que Establece las Bases Normativas para Expedir las Condiciones Generales de Trabajo a las que se Sujetaran los Trabajadores de Confianza de los Poderes Públicos, Organismos Autónomos y Municipios del Estado de Veracruz-Llave	0	+5	0	0	+5
12	Social	Ley para Prevenir y Eliminar la Discriminación en el Estado de Veracruz de Ignacio de la Llave	+5	+5	+5	0	+15
13	Social	Ley de Salud del Estado de Veracruz de Ignacio de la Llave	0	+5	+5	+4	+14
		Summary of social laws	+15	+34	+15	+6	+70
14	Security	Ley de Acceso de las Mujeres a una Vida Libre de Violencia para el Estado de Veracruz de Ignacio de la Llave	+4	+5	+5	0	+14
15	Security	Ley del Sistema Estatal de Seguridad Pública para el Estado de Veracruz de Ignacio de la Llave	0	+5	+5	0	+10
16	Security	Ley para la Declaración Especial de Ausencia por Desaparición de Personas para el Estado de Veracruz de Ignacio de la Llave.	+1	+5	+5	0	+11
17	Security	Ley de Protección de Datos Personales en Posesión de Sujetos Obligados para el Estado de Veracruz de Ignacio de la Llave	0	+2	+5	0	+7
18	Security		+2	+5	+5	+2	+14

(Continues)

TABLE A3 (Continued)

Dimension	Law	Economic	Social	Security	Environmental	NCS score	
	Ley de Protección Civil y la Reducción del Riesgo de Desastres para el Estado de Veracruz de Ignacio de la Llave						
19	Security	Ley del Sistema Estatal Anticorrupción de Veracruz de Ignacio de la Llave	+1	+5	+5	0	+11
	Summary of security	+8	+27	+30	+2	+67	
20	Environmental	Ley de Vida Silvestre para el Estado de Veracruz de Ignacio de la Llave	+5	+5	+4	+5	+19
21	Environmental	Ley de Aguas del Estado de Veracruz	+5	+5	+5	+5	+20
22	Environmental	Ley de Pesca y Acuicultura Sustentables para el Estado de Veracruz de Ignacio de la Llave	+5	+5	+5	+5	+20
23	Environmental	Ley Estatal de Mitigación y Adaptación ante los Efectos del Cambio Climático	+1	+1	+5	+5	+12
24	Environmental	Ley de Desarrollo Forestal Sustentable para el Estado de Veracruz de Ignacio de la Llave	+5	+5	+5	+5	+20
25	Environmental	Ley Estatal de Protección Ambiental	+5	+5	+5	+5	+20
26	Environmental	Ley de Prevención y Gestión Integral de Residuos Sólidos Urbanos y de Manejo Especial para el Estado de Veracruz de Ignacio de la Llave.	+5	+5	+5	+5	+20
	Summary of environmental laws	+31	+31	+34	+35	+131	
	Grand total	+71	+106	+85	+59	+321	

Source: Table compiled by authors.

APPENDIX B: Questionnaire for expert interpretation of NCD results (translation from Spanish)

Below are a series of tables and figures, together with some questions.

- In general, Table B1 indicates that the scores for normative coherence for sustainable development in the national legal framework is greater than those of the two states included in this study (Aguascalientes and Veracruz). In your opinion, this can be attributed to: (Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).
 - Mexico's federal legislation is, in general, more complete than state legislation, due to the presence of legislative commissions

and other legislative resources, such as expert panels (legal/institutional explanation).

- At federal level, legislators and their parties are better prepared than their state level counterparts, and hence write better legislation (political explanation).
 - Mexico's federal legislation reflects a broader commitment to sustainable development than state legislation (ideological explanation).
 - Other (explain, briefly):
- The tendencies for normative coherence for sustainability in the legal frameworks of Aguascalientes and Veracruz (illustrated in Figure B1) coincide almost identically with the tendencies at federal level. In your opinion, this can be attributed to: (Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).

	General and federal laws	Aguascalientes	Veracruz	Average
Economic dimension	89	83	71	81
Social dimension	124	99	106	109.6667
Security dimension	113	82	85	93.33333
Environmental dimension	67	44	59	56.66667
	393	308	321	

TABLE B1 Normative coherence for sustainable development in Mexico: The national legal framework compared with those of two states (Aguascalientes and Veracruz)

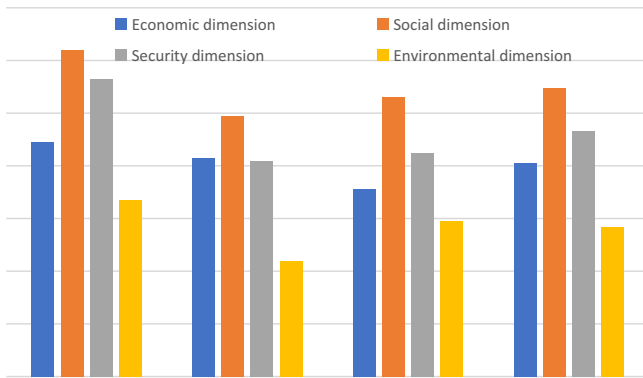


FIGURE B1 Normative coherence for sustainable development in Mexico: The national legal framework compared with those of two states (Aguascalientes and Veracruz) [Color figure can be viewed at wileyonlinelibrary.com]

- a. State laws are closely aligned with federal laws in Mexico's legal system (legal/institutional explanation).
 - b. State level political representatives in Mexico align themselves closely with the political platforms of the national parties (political explanation).
 - c. Sustainable development priorities in Mexico are consistent at different levels of government (ideological explanation).
 - d. Other (explain, briefly):
3. Table B1 and Figure B1 show that the legal frameworks at federal and state (Aguascalientes and Veracruz) levels, are more coherent in the social dimension of sustainability, followed by the security, economic and environmental dimensions, in that order. What is the explanation for this pattern? (Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).
- a. These tendencies follow the historic evolution of sustainability in Mexico's legal frameworks (legal/institutional explanation).
 - b. These tendencies reflect the interests of political representatives and parties within Mexico's legislative system (political explanation).
 - c. These tendencies reflect prioritization by citizens within national debates on sustainability (ideological explanation).
 - d. Other (explain, briefly).
4. Table B1 and Figure B1 show that the environmental dimension of sustainability remains significantly lagging within Mexico's legal framework. In your opinion, this can be attributed to: (Please mark with an "X" your preferred response, and use the space available in

response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).

- a. The recent upwelling of environmental concern as a transversal element in Mexican legislation (legal explanation).
 - b. Political parties and political representatives have not promoted environmental sustainability as much as other dimensions of sustainability. In consequence, environmental concerns are promoted independently by civil society (political explanation).
 - c. Mexico's sustainable development model deprioritizes the environmental dimension so as to promote socioeconomic integration (ideological explanation).
 - d. Other (explain, briefly).
5. Table B1 and Figure B1 show that the scores for sustainability coherence in the economic dimension are relatively low (third, out of four dimensions). In your opinion, this can be attributed to: (Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).
- a. Mexico's legal commitment within the international framework of free trade agreements, such as the North American Free Trade Agreement, that promotes economic growth instead of economic sustainability (legal/institutional explanation).
 - b. The influence of globalized companies (foreign and national) in Mexico's political system (political explanation).
 - c. Mexico's historic commitment to market-based development instead of sustainable development per se (ideological explanation).
 - d. Other (explain, briefly).
6. Table B2 and Figure B2 indicate that environmental legislation is more coherent with the four dimensions of sustainability followed by social legislation and security legislation, which are themselves followed by economic legislation. In your opinion, this can be attributed to: (Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).
- a. Environmental legislation is in accordance with Mexico's commitments with regard to international treaties/accords on sustainable development, which are transversal in nature (legal/institutional explanation).
 - b. Political representatives incorporate transversal terminology in environmental legislation with the objective of reducing the importance and impact of environmental conservation in the other dimensions of sustainability (political explanation).

TABLE B2 Normative coherence for sustainable development in the legislation on economic, social, security and environmental themes: The national framework compared with two states (Aguascalientes and Veracruz)

	General and federal laws	Aguascalientes	Veracruz	Average
Economic laws	80	63	53	65.33333
Social laws	76	83	70	76.33333
Security laws	92	70	67	76.33333
Environmental laws	145	92	131	122.6667

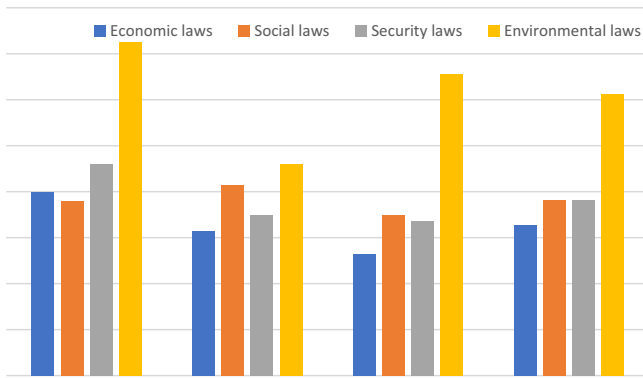


FIGURE B2 Normative coherence for sustainable development in the legislation on economic, social, security and environmental themes: The national framework compared with two states (Aguascalientes and Veracruz) [Color figure can be viewed at wileyonlinelibrary.com]

- c. Environmental sustainability is transversal by nature and is intrinsically linked with sustainability in other dimensions. Mexican legislation adequately reflects this (ideological explanation).
- d. Other (explain, briefly).

7. Table B2 and Figure B2 show that economic legislation is more coherent with the four dimensions of sustainability than social legislation, at the federal level. Social legislation is more coherent with the four dimensions of sustainability than economic legislation at the state level (both in Aguascalientes and in Veracruz). In your opinion, this could be attributed to: *(Please mark with an "X" your preferred response, and use the space available in response "d" if you choose this option. You may print the questionnaire and write your responses by hand, or respond directly in this text document).*

- a. Federal economic legislation establishes a more transversal legal framework to accommodate its commitments within international treaties, while state laws focus on more specif/local economic matters (legal/institutional explanation).
- b. State level legislators pay more attention to social sustainability than federal legislators, as they are closer to their electorates (political explanation).
- c. Economic sustainability is a national issue by nature, whereas social sustainability depends on the specificities of each state.
- d. Other (explain, briefly).