

# Why serve soup with a fork?: How policy coherence for development can link environmental impact assessment with the 2030 agenda for sustainable development



Harlan Koff<sup>a,b,c,\*</sup>

<sup>a</sup> Department of Geography and Spatial Planning, University of Luxembourg, Maison des Sciences Humaines, 11, Porte des Sciences, L-4366 Esch-Belval, Luxembourg

<sup>b</sup> Instituto de Ecología, A.C. (INECOL), Carretera antigua a Coatepec 351, El Haya, Xalapa 91073, Veracruz México

<sup>c</sup> Department of Politics and International Relations, University of Johannesburg, B Ring 2, Cnr of Kingsway and University Roads, PO Box 524, Auckland Park, Johannesburg, 2006, South Africa

## 1. Introduction

The Sustainable Development Goals (SDGs) re-focused development cooperation towards universal and transformative development with the purpose of meeting the socio-ecological needs of local communities while simultaneously addressing power imbalances in the global arena (Koff and Maganda, 2016, p. 96). Furthermore, the SDGs look beyond traditional linear development relationships by adopting an inclusive approach that promotes interconnectedness, partnerships and focus on complex interactions within and between development goals.

The ambition of this agenda is impressive. However, critics have correctly questioned whether appropriate policy methods and tools exist for the adequate implementation of transformative development (Martens, 2015). These challenges are even more significant given that the implementation of the SDGs falls to nation-states.

This is where the Sustainable Development Agenda must address one of its most important challenges, which is the focus of this article: “Can the transformative development promoted by the SDG’s be achieved through the policy tools presently utilized by nation-states, such as environmental impact assessment?” In response to this question, this article will examine the use of Environmental Impact Assessment (EIA) in Mexico. It is organized into six sections. Following the introduction, part two presents the article’s methods. Part three introduces policy coherence for development (PCD), the conceptual approach through which EIA is examined. Part four (results) discusses EIA and the proposed Caballo Blanco mine in Veracruz State. This section is followed by a discussion of EIA through the lens of PCD. Finally, part six presents conclusions. In general, this research inquires whether EIA is coherent with the spirit and objectives of the SDGs or whether the implementation of environmental impact assessment in the 2030 Agenda for Sustainable Development is metaphorically comparable to serving soup with a fork.

### 1.1. Key concepts

This article addresses three key concepts: transformative development, environmental impact assessment and policy coherence for development. The first of these ideas, “transformative development” is the object of this study. Sustainable development paradigms have broadened in global development debates. According to the United Nations, the 2030 Agenda for Sustainable Development (2030 Agenda) is a “shared blueprint for peace and prosperity for people and the planet, now and into the future.” (United Nations, 2020) It acknowledges that addressing poverty is dependent on reducing global inequalities, mitigating climate change and preserving natural resources. It also promises to “leave nobody behind.” (United Nations, 2020) This agenda promotes transformative development as defined above. Scholars such as Fukuda-Parr (2016) have recognized this normative shift as a necessary response to the increasing complexity of contemporary challenges to sustainable development.

While the ambition of the SDGs is impressive, critics, such as Spangenberg (2017) have noted that the 2030 Agenda is characterized by numerous inherent incoherences. Scholars such as Le Blanc (2015), Nilsson and et al. (2018) have modelled policy analysis of the SDGs to highlight the presence of tradeoffs that characterize the 2030 Agenda and undermine the effort to promote transformative development. This analysis contends that policy approaches need to address these tradeoffs in order for the SDGs to achieve to their ambitious goals. At the domestic level, observers, such as Kirsop-Taylor and Hejnowicz (2020) have advocated for the establishment of hybrid agencies aimed at addressing nexus complexity. For these reasons, this article questions whether traditional policy approaches can be utilized to implement transformative development as promoted through the 2030 Agenda.

Environmental Impact Assessment (EIA) has been chosen for this article because it represents one of the traditional policy tools utilized throughout the world to domestically promote sustainable

\* Corresponding author at: Department of Geography and Spatial Planning, University of Luxembourg, Maison des Sciences Humaines, 11, Porte des Sciences, L-4366 Esch-Belval, Luxembourg

E-mail address: [Harlan.Koff@uni.lu](mailto:Harlan.Koff@uni.lu).

<https://doi.org/10.1016/j.eiar.2020.106477>

Received 21 April 2020; Received in revised form 15 September 2020; Accepted 16 September 2020

0195-9255/ © 2020 Elsevier Inc. All rights reserved.

development. EIA has also been incorporated in numerous international treaties, protocols and conventions including, the United Nations Framework Convention on Climate Change and the United Nations Convention on the Law of the Sea. This underlines the relevance of EIA for the implementation of the SDGs. However, recent studies have addressed seeming limitations of EIA as a policy assessment tool. On one hand, supranational policy assessments, such as the Sustainable Development Goals Progress Reports, and the Global Sustainable Development Report (which is an assessment of the assessments in the progress reports) focus on national and regional headway towards achievement of the SDGs. The progress reports examine transformative development processes and results for each individual goal. The Global Sustainable Development Report goes further by identifying levers for the implementation of transformative development and progress adapting these levers for the promotion of the desired transformative development proposed by the SDGs. While these reports provide interesting guidelines, their macro-approaches require refinement. For example, the levers identified by the Global Sustainable Development Report include governance, economy and finance, individual and collective action, and science and technology. While these levers surely affect transformative development, it is unclear how to activate them through concrete domestic policy mechanisms. EIA could seemingly provide such clarity. However, experts on EIA as a policy assessment tool, such as Kolhoff et al. (2018) have noted how much discussion has focused on how to improve EIA capacity development while little consensus has been achieved on what to improve, thus establishing a lag in the evolution of EIA capacity development. Wilkins (2003) has illustrated how emphasis has been placed on eliminating subjectivity from EIA, instead claiming that subjectivity is a key attribute for the promotion of sustainability. These tendencies in fact, contribute to the seeming gap between supranational policy assessment tools used in the 2030 Agenda for Sustainable Development and domestic EIA.

In general, the literature on EIA has highlighted objectivity and implementation. One strand of the literature examines new techniques adopted to improve this policy/planning tool's effectiveness. Scholars in this field have in fact, introduced and examined new methodologies, instruments and technologies that have refined procedural approaches to EIA. For example, Scullion and et al. (2011) introduce remote sensing and Landsat satellite data. Fujimori (2017) use Asia-Pacific Integrated Assessment/Computable General Equilibrium (AIM/CGE) to quantify Shared Socioeconomic Pathways (SSPs). Another branch of this literature addresses EIA practices. For example, Cashmore and Richardson (2013) discuss power in relation to conflict and development, participation in EIA and the generation/use of knowledge in EIA (Cashmore and Richardson, 2013). Bidstrup (2017) identifies grey IA defined as "informal dialogue with IA practitioners that takes place before screening," (p. 234) as a significant driver of the outcomes of formal impact assessment.

Recent discussions of EIA, however, have focused on its use as much as on methods. Loomis and Dziedzic's (2018) evaluation of EIA, identifies four dimensions of "effectiveness": procedural (process structure and adherence to the policy), substantive (the effects of EIA on the decision-making process and outcomes), transactive (the financial and temporal costs of conducting EIA) and normative (the extent to which EIA meets its ideal purpose). The normative dimension is the most relevant to the implementation of the SDGs. Without clear purpose, methodological/technological advances in EIA can make little impact. Loomis and Dziedzic note that this dimension is one of the least developed in the literature on EIA, which is dominated by procedural studies (Loomis and Dziedzic, 2018: p. 30).

This is recognized in the scholarship on environmental impact assessment theory (Cashmore, 2004). Numerous studies examine the conceptualization of EIA. Morgon (2017) theorizes best practice in impact assessment with particular focus on knowledge diffusion and learning processes. Sanchez and Mitchell (2016) examine learning processes within impact assessment procedures in order to address

failure to learn as a defining characteristic of EIA. These discussions are well-summarized by Retief (2010) through presentation of the following key questions: "Do we have a clear sense of the purpose of EIA, and what it comprises? What are we achieving through this process?" (p. 377).

If we accept that the 2030 Agenda acts as guidelines to nation-states for sustainable development strategies, then we can posit that EIA, like other policy tools should promote the transformative development that characterizes the SDGs. Due to its complexity however, transformative development requires a transversal normative commitment (Häbel, 2020) to sustainability in different policy arenas. This raises questions about EIA as an appropriate policy tool because of the aforementioned concerns over "normative effectiveness" or "sense of purpose."

For this reason, this analysis introduces policy coherence for development (PCD) as a third key concept. In asking whether EIA can promote transformative development as defined by the SDGs, this article asks whether PCD can be applied to EIA in order to promote transformative development. PCD is considered one of the pillars of the 2030 Agenda and it is embedded in SDG 17 on "Strengthening the Means of Implementation and Revitalizing the Global Partnership."

According to the Organization for Economic Co-operation and Development (OECD), policy coherence for development is "an approach to integrate the dimensions of sustainable development throughout domestic and international policy-making. (OECD, 2019) PCD (since expanded to PCSD- policy coherence for sustainable development) addresses the trade-offs that characterize transformative development and promotes a "whole of government" approach to sustainable development policy-making. For this reason, this article inquires whether PCD could improve the normative effectiveness of EIA, thus making it a more appropriate tool for the domestic implementation of the SDGs.

## 2. Materials and methods

### 2.1. Case selection: Mexico

Mexico has been chosen for this study because it can be considered a representative case for implementation of the SDGs. First, like many countries, Mexico has ratified important international environmental treaties, providing the country with a strong normative framework for 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 and 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.

Mexico can also be considered a critical case for the study of policy coherence for development 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). Following the national commitment to PCD, the State of Veracruz has also formally committed to policy coherence for sustainable development. It was the first Mexican state to establish its

own Plan for Sustainable Development and it is the first state to found a Network of Municipalities for the Application of the Sustainable Development Goals. (Secretaría de Finanzas y Planeación, 2017).

## 2.2. EIA in Mexico: state of the art

A growing body of scholarship has focused on environmental assessment in Mexico both in terms of procedures (Palerm and Aceves, 2004; Challenger, 2018; Singh and et al., 2018) and impacts in specific sectors such as water (Wilder and et al., 2016), waste management (Aldana-Espitia and et al., 2017), coastal development and ports (Ramirez-Macias, 2017), etc. Palerm and Aceves (2004) have described EIA implementation in Mexico as a “closed” process. The EIA procedure begins when a developer submits an environmental impact statement (EIS) with a permit application requesting changes in land use zoning. Mexico's Secretariat of Environment and Natural Resources (SEMARNAT) approves, denies, or conditionally approves the project following proposal review. All EIS under review are then published in the *Gaceta Ecológica* (<http://sinat.semarnat.gob.mx/Gaceta/aniosgaceta>). Public consultation may be conducted by SEMARNAT following written request by an individual party based on information included in the *Gaceta Ecológica*. SEMARNAT may (not must) oblige developers to announce a public meeting on an EIS in local newspapers. If SEMARNAT eventually denies the EIS, the developer may challenge the decision by appealing to a federal administrative court. No external monitoring mechanisms of EIA exist in Mexico and SEMARNAT is the sole guarantor of assessment quality. In this regard, EIA in Mexico reflects situations found in many consolidating democracies. For example, Singh and et al. (2018) presented a study of EIA in seven international locations, including Veracruz, Mexico. The study underlined similar EIA implementation problems including unclear methodologies, over-estimation of mitigation effectiveness and limited input from stakeholders. Other experts such as Challenger (2018) have similarly focused on the lack of critical external reviews of EIA. Brenner (2018) has cited the rigidity of Mexico's institutional governance as the main culprit inhibiting the implementation of integrated environmental assessment.

Other observers, such as Palerm and Aceves (2004) have documented how citizen access to environmental assessment has been limited. Specifically, these authors have highlighted the obstacles that have prevented poorer, rural populations and ethnic groups from participating in EIA, despite the existence of formal integrating measures. Hernández-Huerta and et al. (2018) illustrate how citizen participation has been channeled into ineffectual consultative bodies, such as local councils and water basin commissions, where residents can raise environmental concerns but their input is rarely considered in state and federal decision-making processes.

These systemic concerns have hindered the substantive effectiveness of EIA in Mexico. Observers of Mexican environmental impact assessment (Tejada and et al., 2014) have noted that limited political will has significantly undermined the emergence of Strategic Environmental Assessment which impacts the normative effectiveness of EIA.

## 2.3. Mining and the SDGs

Mining has been chosen for this study because it is a cross-cutting sector that affects multiple SDGs differently. As the United Nations Development Program (UNDP) report entitled *Mapping Mining to the Sustainable Development Goals: An Atlas* states: “Mining is a global industry...When managed appropriately, it can create jobs, spur innovation and bring investment and infrastructure at a game-changing scale over long time horizons. Yet, if managed poorly, mining can also lead to environmental degradation, displaced populations, inequality and increased conflict, among other challenges.” (UNDP, 2016: p. 2). As such, mining is a sector, like others, where tradeoffs between sustainable employment, environmental conservation, energy, water access, etc. are inherently present (Diallo, 2019). This illustrates the

aforementioned complexity of implementing the 2030 Agenda. Mining presents an interesting arena in which to test the value of EIA for SDG implementation. According to Boerchers et al. (2018), “current EIAs are often blind to tradeoffs and frequently do not ensure that mines are planned and operated to avoid negative mining legacy effects while also amplifying long term sustainability.” (Boerchers et al., p. 84).

## 2.4. Data collection

Data was collected for this article through reviews of the literatures on Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA) and Policy Coherence for Development (PCD). The first two reviews (see reference list below) of approximately fifty works were utilized to construct a state of the art of EIA and understand recognized links with the SDGs (which have not yet been explicitly explored in detail). The last literature review was used to identify potential links between PCD and EIA. Moreover, this research analyzed the environmental impact statement for the proposed Caballo Blanco mining project as well as the response issued by SEMARNAT in order to identify claims made by the Candymin corporation (which promoted the study) regarding the mine's potential impacts concerning water, land displacement, waste (specifically in relation to diesel and cyanide), impacts on flora and fauna, and deforestation. These documents were complemented by ten scientific articles and postgraduate theses on the project and approximately twenty local newspaper articles from Veracruz State and five reports from local non-governmental organizations. Four interviews were carried out with academic experts on environmental impact assessment in Mexico who were also active participants in the public discussion over Caballo Blanco. These interviews were utilized to verify data collected from primary and secondary sources. They have not been cited directly in order to ensure the anonymity of the interviewees. Also, they have not been cited because these interviewees participated in the writing of an opposition report to the mine which would introduce biased information into the analysis. Because the research was conducted after the project's environmental impact statement was first rejected in 2012, it was not possible to interview public officials or representatives of the mining corporations proposing the project which is a limitation of the study. However, this was mitigated through examination of newspaper articles with public declarations and public videos on the project which were produced by both Gold Corp mining and opposition movements. These videos present the mining company's public stance on the benefits of the mine and the company's organization of a public meeting where the mining project was presented to local communities.

## 2.5. Data analysis

Data analysis is based on a qualitative case study. Building on research focusing on normative policy coherence for development, “transformative development” as defined above was established as the reference point for analysis. Empirical research applies the overall research question presented above to Mexico. It questions how appropriate Mexican use of EIA is for the country's implementation of transformative development as defined by the 2030 Agenda. Given Mexico's formal domestic commitments to both international sustainable development norms and policy coherence for development, the country represents a case where environmental impact assessment should be linked to sustainable development. According to the *Principles of Environmental Impact Assessment Best Practice* formulated by the International Association of Impact Assessment (1999), “The aim is to promote the effective practice of environmental impact assessment consistent with the institutional and process arrangements that are in force in different countries.” Because Mexico has made constitutional commitments to the SDGs and PCD has been incorporated into its institutional environmental governance framework, EIA should be consistent with these paradigms.

This research examines this hypothesis through examination of the debate surrounding the proposed Caballo Blanco open pit gold mine in Actopan and Alto Lucero, Veracruz. These municipalities are not characterized by the extreme poverty found elsewhere in Mexico, but serious development challenges exist. Important social deprivation indicators are higher in Actopan than state and national averages. For example, the percentages of residents lacking access to education (32.7% Actopan, 25.8% Veracruz, 20.7% Mexico), health services (49% Actopan, 34.9% Veracruz, 29.2% Mexico) and social security (72.5% Actopan, 69.2% Veracruz, 60.7% Mexico) is higher locally than in Veracruz and Mexico (CONEVAL, 2019). Poverty rates are slightly lower in Actopan than state averages (54.6% Actopan, 57.3% Veracruz, 41% Mexico) but they remain significantly higher than national averages (CONEVAL, 2019). Alto Lucero, the other municipality potentially affected by Caballo Blanco has a higher poverty rate of 70.5% (CONEVAL, 2019). Half the employed population in Actopan works in agriculture (sugar cane, tomatoes, corn, cattle) (Estado de Veracruz, 2016a) as does half the employed population of Alto Lucero (corn, coffee, mango, cattle) (Estado de Veracruz, 2016b). Caballo Blanco was chosen for this research because these structural development challenges highlight the need for transformative strategies in the region. The debate over the proposed Caballo Blanco mine focused on tradeoffs between economic benefits and environmental concerns in an area characterized by significant marginalization amidst important biodiversity. The Caballo Blanco case is also important because it is widely considered to be successful as EIA blocked the establishment of an unsustainable mine. At the same time, this article questions whether this “success” has promoted transformative development in the region.

### 3. Theory: policy coherence for development and its relevance to EIA

EIA procedures exist in order to protect local communities from environmentally negligent or abusive practices. While environmental conservation is noble and necessary, it is not synonymous with transformative development as defined by the SDGs. Studies in this field, (see Koff and Maganda, 2019) indicate that public subsidies focused on conservation can increase the dependence of rural communities on government payments by restricting sustainable economic opportunities. The key to transformative development is a balanced approach that protects ecosystems but also promotes well-being. Unfortunately, it is difficult to simultaneously operationalize sustainability goals within domestic contexts as the tradeoffs discussed above affect sustainable development at different levels. This article inquires whether PCD could facilitate this task if applied correctly to EIA.

PCD was first proposed by the European Union (EU) and the OECD in the 1990s. Since then, it has been promoted by international organizations and their member states as a means to foster sustainable development. PCD is included in Target 17.14 of the 2030 Agenda, focusing on sustainability partnerships for achievement of the SDGs (Graham and Graham, 2019). In global discussions, the concept has been re-proposed as policy coherence for sustainable development (PCSD) in order to highlight the importance of “whole of government approaches” to sustainability (Larsson, 2018).

As international organizations have promoted PCD/PCSD, academic perspectives have been very critical of the concept. Earlier studies of PCD (Forster and Stokke, 1999; Hoebink, 2004) unpacked the notion of “coherence” through presentation of typologies of incoherences. Empirical studies examined PCD implementation (or lack thereof) in policy arenas such as security (Picciotto, 2004), trade (Grabel, 2007), agriculture (Matthews, 2008), etc. Grabel (2007) has indicated that PCD has been abused by international organizations. Thede (2013) contends that PCD has reinforced North-South divisions in order to maintain stability in global affairs. The recognition of “Northern” bias in PCD approaches is present in research by Siitonen (2016) and Mbanda and Fourie (2019).

Recent studies have raised important questions on PCD. Carbone (2008) correctly contended that PCD can be pursued as both a means and an end and he illustrates how the EU and OECD have promoted PCD as the latter. Carbone and Keijzer (2016) argue that the EU has pursued the development of institutional reform over policy effectiveness. Koff and Maganda (2016) have shown how donor program efficiency has been prioritized over normative change and the pursuit of global equity. Pilke and Stocchetti (2016) contend that EU policy tools like PCD have reduced impact because the EU defines inequality narrowly in its development cooperation strategies, thus limiting scope of action. Similarly, Koff (2017b) argues that the EU's systemic securitization of development aid undermines PCD implementation at the policy level. Häbel (2020) further examines the relationships between EU External Action and specific policies by analyzing different EU policy communities in Vietnam which do not interact and consequently their policy objectives diverge, thus undermining normative policy coherence for development. Finally, Koff et al. (2020) highlight PCD's institutionalized character which limits normative impact due to the absence of mechanisms for citizen participation.

Despite these critical narratives, recent research has emerged that re-proposes PCD for SDG implementation because it addresses the tradeoffs mentioned above. Zeigermann (2020) contends that PCD promotes human security because it fixes on policy interlinkages and unintended consequences. Collste et al. (2017) propose PCD as the basis for SDG integrative modelling techniques. Building on these studies, this research posits that PCD (and PCSD) should not be viewed as a generalized policy approach aimed at establishing “whole of government” actions. Instead, PCD should be proposed as a policy methodology to be applied to existing instruments, such as EIA to re-direct them towards transformative development. A policy methodology is defined as evaluation criteria which guide the implementation of policy tools (Einbinder, 2010). Existing policy methodologies include, cost-benefit analysis, needs assessment, SWOT analysis, etc. Adapting PCD as an evaluation criteria for use within EIA would aim to reinforce “normative effectiveness” as described above.

### 4. Results: EIA and the proposed Caballo Blanco project

Mexico's mining activities go back 500 years. The country's mining industry generates important revenue, contributing 2.5% to the national Gross Domestic Product (GDP) and 8.3% to the industrial GDP. It also generates significant employment, creating 379,000 direct jobs and almost two million indirect jobs in 2018 (International Trade Administration, 2019). More significantly, Mexico receives the fourth largest amount of global foreign direct investment (FDI) for mining and the second most FDI in this sector in Latin America. Mining contributed USD 1.4 billion of FDI inflow to Mexico in 2018. (International Trade Administration, 2019). The most prominent mining investments have come from Canadian companies whereas US investments in Mexican mining are focused on auxiliary markets, such as machinery, security, technology and repair. The North American Free Trade Agreement (NAFTA) (since substituted by the United States-Mexico-Canada Free Trade Agreement in 2019) has facilitated these activities. According to the International Trade Administration, “Foreign suppliers to the mining industry have very few barriers to entering this market. NAFTA has made it easy for U.S. suppliers to sell in Mexico without complications,...In fact, most of the bureaucratic burden falls on the Mexican importer, and U.S. suppliers must only expedite their products to the arranged port of entry or U.S. border.” (International Trade Administration, 2019).

The Caballo Blanco project has been proposed within this context of regional economic development. The project was originally promoted by Goldgroup Mining Inc., a Canadian corporation, in 2010. The property identified for the mine is located in Actopan and Alto Lucero, Veracruz approximately three km from the Laguna Verde nuclear plant and 65 km from the port city of Veracruz (see Fig. 1). This strategic



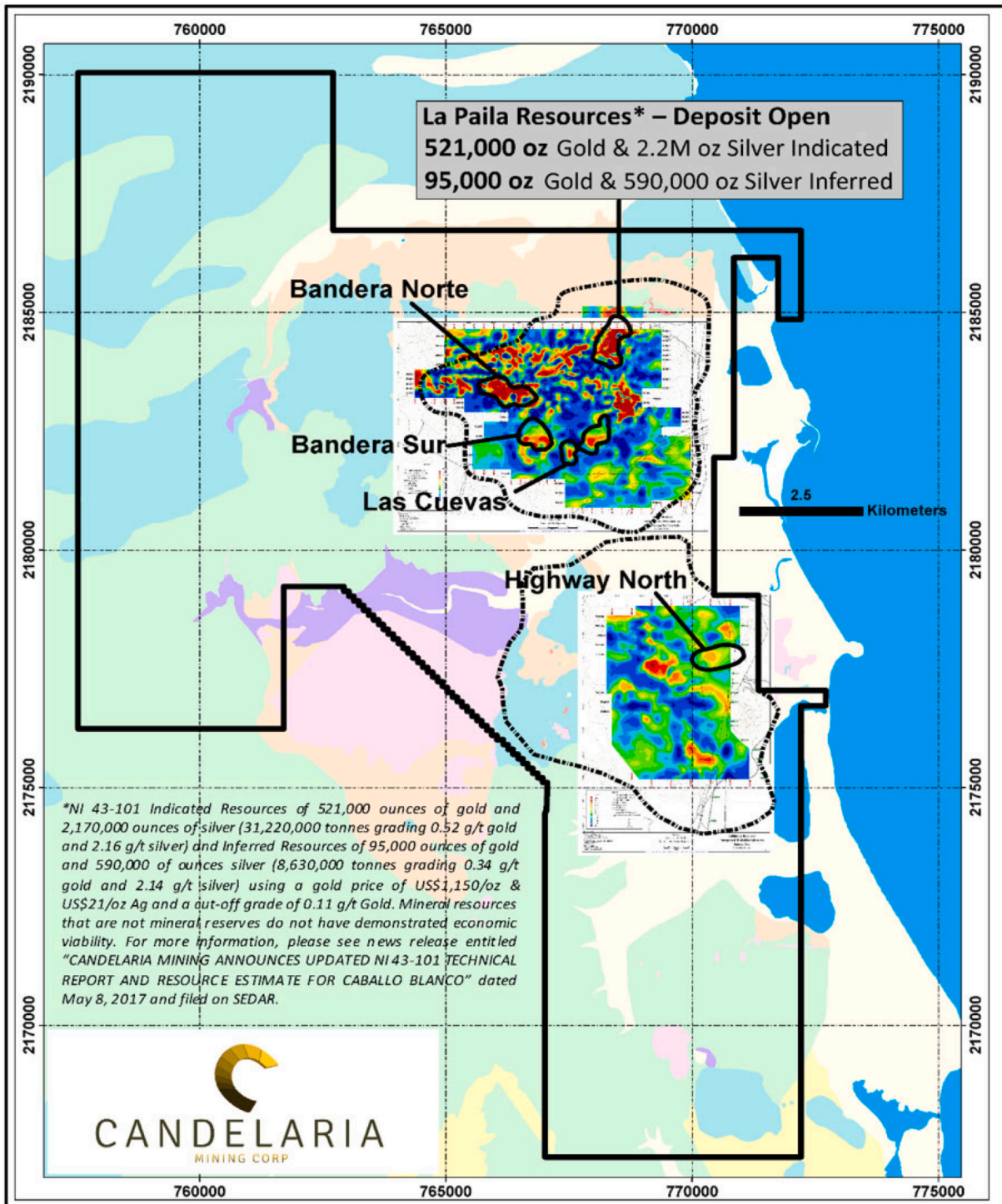


Fig. 1. The Proposed Caballo Blanco Mine Site. Source: Candelaria, 2018.

location was selected because it guarantees energy and transportation in addition to minerals. The mining property consists of fourteen mineral claims, including 521,000 oz of gold, covering an area of 54,732 ha. (Keane and et al., 2012; Candelaria, 2018). Goldcorp's plan was to mine 100,000 oz of gold per year for six to ten years. In order to do so, the company would have to move thirty million tons of earth per year, utilize 2000 m<sup>3</sup> of water per year and employ 1500 tons of cyanide per year (Asemblea Nacional de Afectados Ambientales, 2019). Critics contend that this will pollute the soil and surrounding water sources. Moreover, because this is a hurricane/tropical storm zone, soil erosion could lead to more intense storm impacts.

The EIS (Environmental Impact Statement) for Caballo Blanco was submitted to SEMARNAT in 2011. During the review period, grassroots opposition arose, including local, national and international environmental groups, academics, and institutions, such as the Instituto de Ecología (INECOL) (Delgado Ramos, 2012; Domínguez González and Ojeda Jimeno, 2018). These groups mobilized because the area to be affected by the mine is one of the most biologically diverse in Mexico.

Due to the presence of the eastern Sierra Madre mountain range, the constant humidity that comes from the Gulf of Mexico, combined with different soil origins, has established various ecosystems in this region, such as tropical oak forests, sub-humid rain forests, wetlands, swamps

and mangroves, coastal dunes and lagoons. Numerous local species of flora and fauna are legally considered threatened/endangered species. Two biological characteristics make this area especially unique. The first is the presence of cycads which are plants surviving from pre-historic times. The second is the semi-annual migration of hundreds of thousands of birds, the most important such migration in the world.

In addition to these ecological impacts, opponents highlighted the potential human impacts of the mine. First, they argued that noise and soil pollution would affect inhabitants of Actopan. Second, the proximity of the proposed mine to the Laguna Verde nuclear power plant raised public safety concerns.

Amidst this uproar, SEMARNAT rejected the EIS in 2012. Specifically, SEMARNAT claimed that numerous elements of the EIS were either false or understated. SEMARNAT remarked: 1) Goldcorp claimed that it would utilize existing roads when new roads would be needed in order to access drilling sites, 2) Goldcorp omitted mention of new water ponds necessary for drilling which would affect vegetation in the area, and 3) Goldcorp refused to mention the need to utilize water and bentonite during drilling which could threaten local flora and fauna (Chávez Aguilar and et al., 2012).

The emerging literature on Caballo Blanco generally portrays the above narrative as a success for citizen mobilization and environmental impact assessment (see Panico and Garibay, 2014; Chávez Aguilar and et al., 2012). Events following the 2012 EIS refusal by SEMARNAT however, raise important questions.

Specifically, Goldgroup sold the property for Caballo Blanco to Candelaria, another Canadian mining firm, in 2015 (Candelaria, 2018). Since then, many of the weaknesses of Mexican environmental governance have re-created tension around the project. First, political administrations have changed in Veracruz as the governorship has passed from the *Partido Revolucionario Institucional* (PRI) to the *Partido Acción Nacional* (PAN) to the *Movimiento Regeneración Nacional* (Morena). With each new governor, the state's development strategies have been modified (personal interviews, 2019). Second, Mexican mining and trade policies facilitated Candelaria's investments which led to the 2015 re-submission of the EIS. This EIS was then retracted by Candelaria in 2017 due to the "political environment surrounding the project" (Andrade, 2017). Since 2018, periodic protests against the mine have occurred in order to ensure that the EIS does not get resubmitted. Consequently, the anti-mine coalition remains vigilant and protest occurs, even when the proposal is inactive. (Ruiz Leotaud, 2018).

Unfortunately, this approach to environmental assessment does not seem to support the transformative development promoted by the SDGs. The Caballo Blanco case is important because it is considered to be successful EIA. Environmental groups, academics, research institutions, state government, SEMARNAT, cooperated in order to prevent destructive open pit mining in Veracruz. Nonetheless, this case is representative of Mexican environmental movements which oppose proposed infrastructure or extraction projects (see Aguilar León, 2018) without proposing alternatives. These movements prevent detrimental environmental impacts but they confirm adversarial relationships

between citizens, business interests and government authorities and they do not propose alternative avenues to transformative development as defined by the SDGs. EIA is problematic within this context because it is reactive and defensive in scope. Citizens (rightfully) mobilize around a proposed EIS and then they must continue to do so every time that an EIS is (re)submitted and projects such as Caballo Blanco are re-proposed. This pattern does not contribute to the attainment of the SDGs. Moreover, EIA highlights opposition to invasive projects but it does not promote engagement with sustainable small-scale proposals. In short, the Caballo Blanco initiative reinforced the narrative in Veracruz that all development, including transformative development, negatively impacts ecosystems and communities. The process paradoxically damages normative effectiveness in the name of procedural and substantive effectiveness.

### 5. Discussion: can EIA promote transformative development through a PCD approach?

The preceding section illustrates many limits of EIA. This tool protects communities from social and environmental harm, but what does it promote? Can it facilitate transformative development as proposed by the SDGs? As stated above, research on EIA focuses strongly on procedural effectiveness. The aforementioned literature on EIA in Mexico highlights numerous procedural shortcomings in that country. The Caballo Blanco case is important because it is not characterized by these limitations. The previous section has indicated how EIA functioned as it should. The problem is that the marginalization that characterizes Actopan and Alto Lucero remains and development proposals are blocked by concerns over ecological conservation indicating the presence of tradeoffs.

The issue to be addressed is not the use of EIA which plays an important role in sustainable development. However, the methodology used for implementation of EIA does not seem to be compatible with transformative development and the 2030 Agenda. EIA generally employs cost-benefit analysis. For example, the proposed Caballo Blanco mine promised to create 300–400 jobs in Actopan and Alto Lucero but the mine would only operate for up to ten years (Candelaria, 2018). The impacts on the local ecosystem would last well beyond the termination of mining activities.

As stated above, PCD has been introduced in the 2030 Agenda in order to reconcile these tradeoffs by focusing on the establishment of interlinkages (see Zeigermann, 2020). For this reason, this article proposes that PCD be applied to EIA as evaluation criteria, potentially replacing cost-benefit logics. Instead, the methodology presented below shows how policy coherence for development aims to shift zero sum logic between actors, institutions and sectors into positive sum approaches. Instead of viewing policy frameworks as tradeoffs, PCD attempts to ensure mutually reinforcing synergies focused on sustainability (see Häbel, 2020).

In order to apply PCD analysis to EIA, this article methodologically adopts eight typologies of (in)coherences identified in the PCD

**Table 1**  
Typologies of Policy (In)coherence for Development.

Typology of (In)coherence	Definition
Horizontal (in)coherence	(In)coherence between development and non-development policies
Vertical (in)coherence	(In)coherence between policies of regional organizations, member states, municipalities
Inter-donor (in)coherence	(In)coherence between development policies/projects of different donors
Internal (in)coherence	(In)consistencies between the objectives and means of a given policy (i.e. measurement techniques)
Inter-organizational (in)coherence	(In)coherence between the development policies of a country's government and civil society organizations
Multilateral (in)coherence	(In)compatibility between the development goals and procedural norms of international organizations such as the EU, OECD, the UN, and the international financial institutions
Financial (in)coherence	(in)coherence between the structure of development funding and policy objectives
Normative (in)coherence	(in)coherence between policy strategies in development and non-development policy arenas and core values of liberal democratic societies

Source: Koff, 2017a.

literature. (Koff, 2017a). These typologies (see Table 1) are useful for identifying specific policy interactions and understanding how they impact sustainable development in specific contexts. Coherences are identified by mutually reinforcing relationships. Horizontal coherence identifies synergies between policy sectors. Vertical coherence focuses on synergies between levels of government. Inter-organizational coherence regards mutually reinforcing sustainability strategies between government and non-governmental organizations. All of these typologies adopt this logic according to PCD theory (Carbone, 2008).

In terms of mining, this conceptual approach highlights limited synergies in governance systems. The UNDP sourcebook (2018) has provided specific legislative, financial and ecological recommendations for the mining industry in order to improve sustainability. It contends that mining has traditionally been unsustainable in part due to the incomplete legislative frameworks that exist in host countries. This is certainly the case in Mexico, where federal legislation grants operational advantages to mining through the Mining Law, the Foreign Investment Law, the Agrarian Law and free trade agreements. (Armendáriz Villegas, 2016). Moreover, there are weaknesses in mining legislation, such as the absence of mandatory environmental audits, and the lack of definition in the Mining Law on the phases of closure and abandonment of mines. Other legal holes exist in environmental regulation. For example, mining takes place in protected natural areas in Mexico because a 2014 reform of the Mining Law added a paragraph to Article 6 that states that “the exploration, exploitation and benefit of the minerals or substances referred to in this Law are of public utility, will be preferred over any other use of the land...” (DOF, 1992, Art 6). In this context, the General Directorate of Mining Regulation of the Ministry of Economy has documented that there are 1282 mining concessions in Mexico's 26,823 protected natural areas (Lozada Nava, 2013).

In order to reinforce normative effectiveness and promote SDG implementation, PCD can be viewed as a method through which to domestically enforce international standards and normative guidelines (see Koff, 2017b). The UNDP's sourcebook on *Managing mining for sustainable development* (2018) provides specific recommendations regarding: the implementation of international treaties and directives, the orientation of domestic legal frameworks towards sustainable development, regulation of the social and environmental impacts of mining, and the establishment of a sustainable fiscal regime for mining. These principles can be organized through PCD typologies as benchmarks for

the governance of transformative development aimed at decreasing the vulnerability of local communities like Actopan and Alto Lucero. Table 2 applies this PCD logic to mining in Mexico. The framework presented here indicates that Mexico's mining sector does not address transformative development in six of the eight PCD typologies (one typology is not applicable and formal engagement is evident in another). In terms of PCD theory, this indicates the presence of competitive zero-sum logics rather than positive sum synergies.

Moreover, by modelling PCD according to the internal and external dimensions of policy-making, specific mechanisms that undermine the establishment of sustainability synergies can be identified in order to provide recommendations for the promotion of transformative development in relation to mining (see Fig. 2). Internal policy dimensions refer to specific normative and institutional (in)coherences within a policy sector that impact outcomes. For example, the lack of monitoring and the weakness of policy evaluation in Mexico's system of environmental governance hinders the effectiveness of EIA in relation to mining because it diminishes accountability once mining projects have been approved. (In)coherences in external policy dimensions focus on interactions between a policy sector and other sectors. For example, even if Mexican mining regulations were to be better integrated into the country's environmental and human rights systems (normative coherence), it would be difficult to implement restrictions given the support offered to foreign mining corporations through Mexican trade, finance and tax policies (horizontal (in)coherence). Moreover, local authorities who often lobby for the well-being of their communities have limited impact due to the centralized nature of Mexico's environmental impact assessment and the definition of such actions as “protectionist measures” within Mexico's supranational free trade agreements (vertical (in)coherence). These specific types of (in)coherences can even be quantified through approaches promoted in the PCD literature. For example, Nilsson and et al. (2018) propose a scale for understanding synergies and tradeoffs between the SDGs (see Table 3). It measures policy coherences based on positive or negative impacts and whether these impacts are direct/indirect and intentional/unintentional. The scale has been applied to Mexican mining in figure two below which highlights horizontal, normative and financial incoherences as the strongest contributors to negative development impacts as these incoherences are direct and intentional. Only multilateral coherence is positive, direct and intentional as Mexico has signed/ratified most international environmental treaties (+3). The other sectors

**Table 2**  
Application of Typologies of Policy (In)coherence for Development to Mining.

Typology of (in)coherence	Definition
Horizontal (in)coherence	Trade policies (especially NAFTA/USMCA) have eroded the ability of local/state authorities to govern mining activities in order mitigate/eliminate social and environmental hazards; labor standards do not promote sustainable employment. Tax regulations facilitate foreign investments in Mexican mining.
Vertical (in)coherence	The regulation of mining is centralized in the Ministry of Economy, the Ministry of the Environment (SEMARNAT), and the Water Commission (CONAGUA). States and municipalities do not play roles in mining regulation. Their exclusion from regulatory frameworks often creates adversarial relationships between national and sub-national actors.
Inter-donor (in)coherence	Not Applicable: Funding for mining is private.
Internal (in)coherence	There is lack of monitoring/evaluation of the social and environmental impacts of mining in Mexico. EIA is utilized only to establish potential impacts of mining but no comparative evaluation takes place during or after mining activities. Local communities do not have pre-emptive rights to excavate minerals.
Inter-organizational (in)coherence	There is an incoherence between mining concessions and the rights of indigenous communities as underlined by the Mexican Supreme Court in 2019. The court revoked concessions granted by the federal government due to a lack of free and informed consent from indigenous groups.
Multilateral (in)coherence	Mexico's commitments to international treaties in sustainable development and human rights, as well as the quasi-constitutional nature of these treaties establishes formal multilateral coherence. International organizations, such as the UN, ILO, OECD, etc. all promote sustainability in the country.
Financial (in)coherence	Mexico's fiscal regime does not promote reinvestment of profits in development infrastructure or the well-being of local communities affected by mining.
Normative (in)coherence	Legal mining commitments in Mexico are normatively incoherent due to the lack of interactions between them. Environmental regulation is subsumed by the general notion of “well-being” which is poorly defined. A Mexican federal court only recently (2019) incorporated the rights of indigenous peoples in mining discussions. Human rights commissions in Mexico do not have jurisdiction in mining affairs. SEMARNAT's role in mining is subordinate to the Ministry of Economy once environmental licenses have been granted.

Source: Adapted from Koff, 2017a.



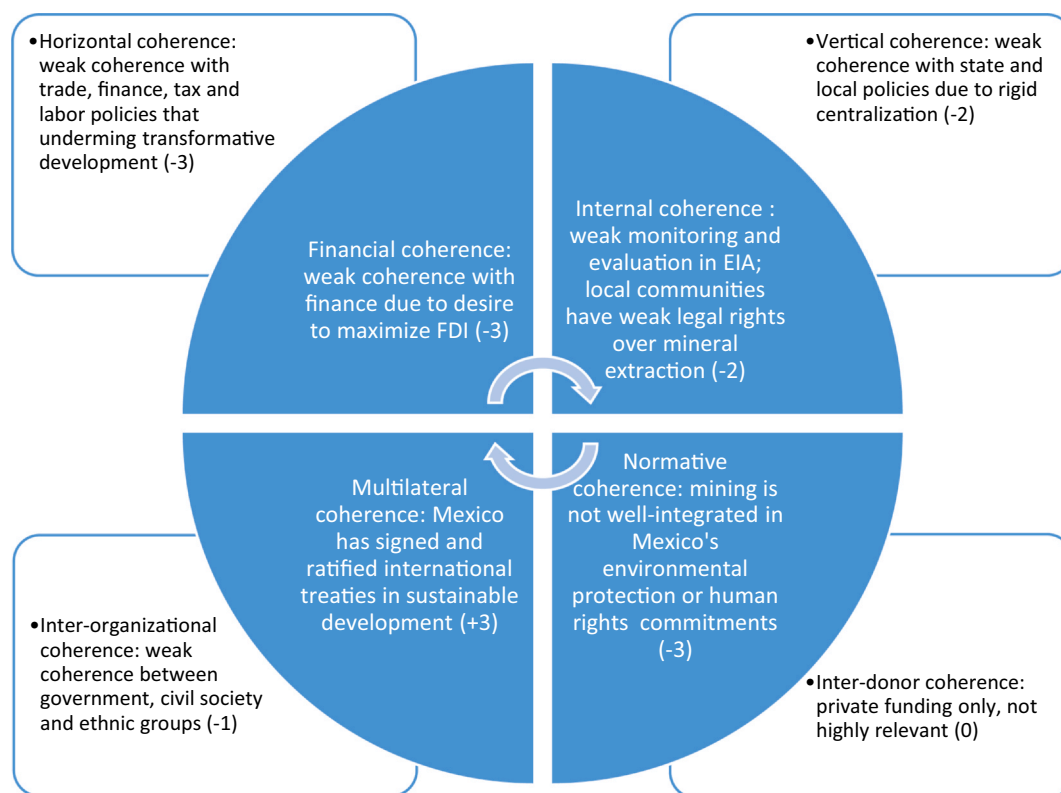


Fig. 2. PCD as a methodological model for policy analysis. Source: Adapted from Koff and Maganda, 2019.

**Table 3**  
Scale for measurement of policy coherence for development.

Interaction	Name	Explanation
+3	Indivisible	Intentional and direct mutual reinforcement
+2	Reinforcing	Unintentional and direct mutual reinforcement
+1	Enabling	Indirect IndirectIndirect mutual reinforcement
0	Consistent	No significant positive or negative interactions.
-1	Constraining	Indirect tradeoffs
-2	Counteracting	Unintentional and direct tradeoffs
-3	Cancelling	Intentional and direct tradeoffs

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

illustrate mixed results.

Through such analysis, EIA could foster transformative development by utilizing the 2030 Agenda as normative criteria for the evaluation of proposed projects/policies. PCD could evaluate whether proposals positively contribute to or detract from transformative development through analysis of interlinkages such as those identified above. Through the logic proposed here EIA could assess whether the relationships with the SDGs are direct/indirect and intentional/unintentional. By highlighting particular (in)coherences and specific relationships to transformative development, this model could be applied to EIA to indicate how policy-makers and stakeholders can propose specific initiatives to promote transformative development through the establishment of synergies and positive sum relationships. Entities proposing new initiatives, such as open-pit mining, would not only need to address the mitigation of harmful socio-ecological consequences, but they would need to promote transformative development through the proposal of specific actions aimed at fostering positive and coordinated interlinkages in each of the PCD typologies.

**6. Conclusions**

Environmental impact assessment has played an invaluable role in

development governance. Obviously, it has provided criteria through which to understand the socio-economic impacts of projects, programs and strategies. It has also opened avenues for public participation in development planning and it has improved transparency. In general, EIA has buttressed environmental regulation and implanted environmental concerns in the general development consciousness.

Is it however, a tool whose time has passed? EIA has become so specialized that the process is often characterized by degrees of specialization which have undermined EIA's overall normative impact (Morrison-Saunders, 2014). This has occurred domestically while international frameworks on sustainability have broadened. For this reason, this article asks, Can the transformative development promoted by the SDG's be achieved through policy tools such as EIA?

EIA, in fact, could be a significant contributor to the implementation of the SDGs because it is an accepted policy tool throughout the world. However, this article has argued that the defensive positioning of EIA limits its effectiveness for the promotion of transformative development. The Caballo Blanco case study illustrates how EIA, even when "successful," does not promote policy changes that pursue transformative development in sectors such as mining. Whereas EIA protects local communities from harm, it does not proactively foster sectoral change, leading to stagnation in policy systems and business as usual among policy actors, especially in the context of consolidating democracies such as Mexico (Mendoza Sammet, 2014). EIA can also inhibit constructive policy dialogues between stakeholders and government officials (evidenced by the Caballo Blanco case).

Even though empirical research is limited to a case study, this article suggests that PCD typologies can identify and highlight tradeoffs and synergies within specific internal and external policy dimensions, in order to improve the normative effectiveness of EIA. PCD has been narrowly utilized thus far, as a set of governance guidelines. Instead, the analysis presented above shows that it can be promoted as a policy methodology for the promotion of transformative development through the application of specific PCD evaluation criteria to existing tools such



as EIA. This would reorient EIA's significant focus on procedural effectiveness towards greater attention to normative effectiveness, thus better linking EIA to the SDGs. The 2030 Agenda aims to transform how we understand and practice development. Because nation-states implement this agenda, the tools that they utilize domestically, such as EIA, must correspond to this new mandate. Otherwise, the SDGs may represent a wonderful soup, that many states are serving with forks.

## Funding

This work was supported by the Consejo Nacional de Ciencia y Tecnología (CONACYT), Mexico. [grant number 296842, 2018: "Uso de big data para la gestión ambiental del desarrollo sostenible (Integralidad Gamma)].

## Credit author statement

As author of this article, Harlan Koff was responsible for all aspects of the manuscript including conceptualization, methodology, data collection, data analysis, investigation, validation, writing, reviewing and editing and visualization. As coordinator of the research team on policy coherence for development, Dr. Koff is responsible for supervision and project administration of research on PCD within the I-GAMMA project.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgements

The author thanks the RISC-RISE Consortium, CIDE-Aguascalientes, INECOL and UPIITA-IPN for the organization of conferences which provided valuable background information for this research. The author thanks Dr. Miguel Equihua, Dr. Octavio Perez-Maqueo, Dr. Arturo Hernández Huerta, Dr. Antony Challenger, Mtra. Julia Ros Cuellar and Eng. Israel Portillo Peralta for their input on EIA in Mexico.

## References

- Aguilar León, I., 2018. Extracción de petróleo y transformaciones socioterritoriales: Comunidad Emiliano Zapata, Veracruz. Mexico. Reg. Cohes. 8 (1), 25–53. <https://doi.org/10.3167/reco.2018.080103>.
- Aldana-Espitia, N.C., et al., 2017. Environmental impact mitigation during solid waste Management in an Industrialized City in Mexico: an approach of life cycle assessment. Rev Mex Ing Quim. 16 (2), 563–580. <https://www.redalyc.org/pdf/620/62052087021.pdf>.
- Andrade, C., 2017. Desiste minera canadiense del proyecto Caballo Blanco en Actopan. RTV. <http://www.masnoticias.mx/desiste-minera-canadiense-del-proyecto-caballo-blanco-en-actopan/> (accessed 28 October 2019).
- Armendáriz Villegas, E.J., 2016. Áreas Naturales Protegidas y minería en México: Perspectivas y recomendaciones. Tesis de doctorado, Programa de Estudios de Posgrado. Centro de Investigaciones Biológicas del Noroeste, S.C, La Paz, Baja California.
- Asemblea Nacional de Afectados Ambientales, 2019. Mina Caballo Blanco. <http://www.afectadosambientales.org/mina-caballo-blanco/>.
- Bidstrup, M., 2017. The 'grey' assessment practice of IA screening: prevalence, influence and applied rationale. Environ. Impact Assess. Rev. 62, 233–239. <https://doi.org/10.1016/j.eiar.2015.07.008>.
- Boerchers, M., Sinclair, A.J., Gibson, R., Halden, N., 2018. "Sustainability is finding the next mine": the complicated relationships among legacies, sustainability, and EA. Environ. Impact Assess. Rev. 71, 84–93. <https://doi.org/10.1016/j.eiar.2018.01.002>.
- Brenner, L., 2018. Los impactos ambientales de las políticas públicas en los manglares de Chiapas, México: Una consecuencia de la falta de integración de la política ambiental. Gestión Pol. Púb. 27 (1), 237–267. <http://www.gestionypoliticapublica.cide.edu/ojs/index.php/gyp/article/view/377/106>.
- Candelaria, 2018. Caballo Blanco Gold Project. <https://www.candelariamining.com/index.php/projects/caballo-blanco>.
- Carbone, M., 2008. Mission impossible: the European Union and policy coherence for development. J. Eur. Integr. 30 (3), 323–342. <https://doi.org/10.1080/07036330802144992>.
- Carbone, M., Keijzer, N., 2016. The European Union and policy coherence for development: reforms, results, resistance. Eur. J. Dev. Res. 28 (1), 30–43. <https://doi.org/10.1057/ejdr.2015.72>.
- Cashmore, M.et.al., 2004. The interminable issue of effectiveness: substantive purposes, outcomes and research challenges in the advancement of environmental impact assessment theory. Impact Assess. Project Apprais. 22 (4), 295–310. <https://doi.org/10.3152/147154604781765860>.
- Cashmore, M., Richardson, T., 2013. Power and environmental assessment: introduction to the special issue. Environ. Impact Assess. Rev. 39, 1–4. <https://doi.org/10.1016/j.eiar.2012.08.002>.
- Challenger, A., et al., 2018. La opinión experta evalúa la política ambiental mexicana: Hacia la gestión de socioecosistemas. Gestión y Pol. Púb. 27 (2), 431–473. <http://www.scielo.org.mx/pdf/gpp/v27n2/1405-1079-gpp-27-02-431.pdf>.
- Chávez Aguilar, C.E., et al., 2012. SEMARNAT: Proyecto Caballo Blanco. In: Powerpoint Presentation, . [http://depa.fquim.unam.mx/amyd/archivero/SEMARNAT\\_34329.pdf](http://depa.fquim.unam.mx/amyd/archivero/SEMARNAT_34329.pdf).
- Collste, D.et.al., 2017. Policy coherence to achieve the SDGs: using integrated simulation models to assess effective policies. Sustain. Sci. 12, 921–931. <https://doi.org/10.1007/s11625-017-0457-x>.
- CONEVAL, 2019. Pobreza en México. Resultados de pobreza en México 2018 a nivel nacional y por entidades federativas. CONEVAL, Mexico City. <https://www.coneval.org.mx/Medicion/MP/Paginas/Pobreza-2018.aspx>, Accessed date: 15 April 2020.
- Delgado Ramos, G.C., 2012. Costos ecológicos de la minería aurífera a cielo abierto y resistencia social: una lectura desde el proyecto Caballo Blanco en México. 14. Intersecciones en Antropología, pp. 279–294. <https://www.redalyc.org/articulo.oa?id=179531063019>.
- Diallo, P., 2019. Regime Stability, Social Insecurity and Bauxite Mining in Guinea Developments since the Mid-Twentieth Century. Routledge, London.
- Dominguez González, N., Ojeda Jimeno, A. (Eds.), 2018. En Defensa del Patrimonio Natural y Cultural de Veracruz: El Caso del Proyecto de la Mina La Paila, Municipio de Alto Lucero, Veracruz. Universidad Veracruzana, Xalapa, Mexico.
- Einbinder, S., 2010. Policy analysis. In: Thyer, B. (Ed.), The Handbook of Social Work Research Methods. Sage, New York, pp. 527–546.
- Estado de Veracruz, 2016a. Actopan. Estado de Veracruz (Ed.), Cuadernillos Municipales Estado de Veracruz.
- Estado de Veracruz, 2016b. Alto Lucero. Estado de Veracruz (Ed.), Cuadernillos Municipales Estado de Veracruz.
- Forster, J., Stokke, O.eds., 1999. Policy Coherence in Development Co-Operation. Frank Cass, London.
- Fujimori, S.et.al., 2017. SSP3: AIM implementation of shared socioeconomic pathways. Glob. Environ. Chang. 42, 268–283. <https://doi.org/10.1016/j.gloenvcha.2016.06.009>.
- Fukuda-Parr, S., 2016. From the millennium development goals to the sustainable development goals: shifts in purpose, concept, and politics of global goal setting for development. Gen. Dev. 24 (1), 43–52. <https://doi.org/10.1080/13552074.2016.1145895>.
- Gabel, I., 2007. Policy coherence or conformance? The new World Bank—International Monetary Fund—World Trade Organization rhetoric on trade and investment in developing countries. Rev. Radic. Polit. Econ. 39 (3), 335–341. <https://doi.org/10.1177/0486613407305281>.
- Graham, S., Graham, V., 2019. Quality political participation and the SDGs in African small island developing states. Reg. Cohes. 9 (2), 1–30. <https://doi.org/10.3167/reco.2019.090202>.
- Häbel, S., 2020. Normative policy coherence for development and policy networks: EU networks in Vietnam. Reg. Cohes. 10 (1), 1–21. <https://doi.org/10.3167/reco.2020.100102>.
- Hernández-Huerta, A., et al., 2018. ¿Puede el desarrollo ser sostenible, integral y coherente? Reg. Cohes. 8 (3), 1–14. <https://doi.org/10.3167/reco.2018.080302>.
- Hoebink, P., 2004. Evaluating Maastricht's triple C: The "C" of coherence. In: Hoebink, P. (Ed.), The Treaty of Maastricht and Europe's Development co-Operation. Aksant, Amsterdam, pp. 183–218.
- International Association for Impact Assessment Assessment, 1999. Principles of Environmental Impact Assessment Best Practice. <https://www.iaia.org/uploads/pdf/Principles%20of%20EIA%2019.pdf>.
- International Trade Administration, 2019. Mexico : Mining and Minerals. <https://www.export.gov/article?id=Mexico-Mining-and-Minerals> (accessed 30 October 2020).
- Keane, J., et al., 2012. Preliminary Economic Assessment Caballo Blanco Gold Heap Leach, Veracruz, Mexico. Document No. Q443-04-028. (Project No. 443-04).
- Kirsop-Taylor, N., Hejnowicz, A., 2020. Designing public agencies for 21st century water-energy-food nexus complexity: the case of Natural Resources Wales. Public Policy Adm. <https://doi.org/10.1177/0952076720921444>. (Accessed 20 July 2020).
- Koff, H., 2017a. Diaspora Philanthropy in the Context of Policy Coherence for Development: Implications for the post-2015 Sustainable Development Agenda. Int. Migr. 55 (1), 5–19. <https://doi.org/10.1111/imig.12277>.
- Koff, H., 2017b. Policy coherence for development and migration: Analyzing US and EU policies through the lens of normative transformation. Reg. Cohes. 7, 5–33. <https://doi.org/10.3167/reco.2017.070202>.
- Koff, H.et.al., 2020. Guidelines for operationalizing policy coherence for development (PCD) as a methodology for the design and implementation of sustainable development strategies. Sustainability 12 (10), 4055. <https://doi.org/10.3390/su12104055>.
- Koff, H., Maganda, C., 2016. The EU and the human right to water and sanitation: normative coherence as the key for transformative change. Eur. J. Dev. Res. 28, 90–110. <https://doi.org/10.1057/ejdr.2015.77>.
- Koff, H., Maganda, C., 2019. Saving the baby while discarding the bathwater: the application of policy coherence for development analysis to payment for watershed services. Madera y Bosques 25 (3), e2531760. <https://doi.org/10.21829/myb.2019.2531760>.

- Kolhoff, A., Driessen, P., Runhaar, H., 2018. Overcoming low EIA performance - a diagnostic tool for the deliberate development of EIA system capacities in low and middle income countries. *Environ. Impact Assess. Rev.* 68, 98–108. <https://doi.org/10.1016/j.eiar.2017.11.001>.
- Larsson, M., 2018. Navigating through contradictory rationalities. Experiences of development in Mexico. *Reg. Cohes.* 8 (3), 70–93. <https://doi.org/10.3167/reco.2016.060201>.
- Le Blanc, D., 2015. Towards integration at last? The sustainable development goals as a network of targets. *Sustain. Dev.* 23, 176–187. <https://doi.org/10.1002/sd.1582>.
- Loomis, J., Dziedzic, M., 2018. Evaluating EIA systems' effectiveness: a state of the art. *Environ. Impact Assess. Rev.* 68, 29–37. <https://doi.org/10.1016/j.eiar.2017.10.005>.
- Lozada Nava, M., 2013. Áreas naturales protegidas y minería. In: Dirección General de Regulación Minera, Secretaría de Economía, CAMIMEX XI Taller de Intercambio de Experiencias, Huatulco, Oaxaca, . <https://www.camimex.org.mx/files/4814/3777/7729/pre6.pdf> (consulted 9 June 2019).
- Martens, J., 2015. Benchmarks for a truly universal Post-2015 agenda for sustainable development. *Reg. Cohes.* 5 (1), 73–94. <https://doi.org/10.3167/reco.2015.050105>.
- Matthews, A., 2008. The European Union's common agricultural policy and developing countries: the struggle for coherence. *J. Eur. Integr.* 30 (3), 381–399. <https://doi.org/10.1080/07036330802141998>.
- Mbanda, V., Fourie, W., 2019. The 2030 agenda and coherent National Development Policy: in dialogue with south African policymakers on policy coherence for sustainable development. *Sustain. Dev. sd.* 2025. <https://doi.org/10.1002/sd.2025>.
- Mendoza Sammet, A., 2014. Social cohesion beyond borders: Does management of mining resources promote social cohesion and regional integration? Lessons from Canada and Mexico. *Reg. Cohes.* 4 (1), 29–52. <https://doi.org/10.3167/reco.2014.040103>.
- Morgon, R., 2017. Conceptualising best practice in impact assessment. *Environ. Impact Assess. Rev.* 66, 78–85. <https://doi.org/10.1016/j.eiar.2017.06.009>.
- Morrison-Saunders, A., et al., 2014. Strengthening impact assessment: a call for integration and focus. *Impact Assess. Proj. Apprais.* 32 (1), 2–8. <https://doi.org/10.1080/14615517.2013.872841>.
- Mumme, S., 2019. On quasi-constitutional treaties: The case of transboundary freshwater compacts. *Reg. Cohes.* 9 (1), 8–38. <https://doi.org/10.3167/reco.2019.090104>.
- Nilsson, M., et al., 2018. Mapping interactions between the sustainable development goals: lessons learned and ways forward. *Sustain. Sci.* 13, 1489–1503. <https://doi.org/10.1007/s11625-018-0604-z>.
- OECD, 2018. Country Profiles: Institutional Mechanisms for Policy Coherence. OECD, Paris.
- OECD, 2019. Policy Coherence for Sustainable Development 2019: Empowering People and Ensuring Inclusiveness and Equality. OECD, Paris.
- Palerm, J., Aceves, C., 2004. Environmental impact assessment in Mexico: an analysis from a 'consolidating democracy' perspective. *Impact Assess. Proj. Apprais.* 22 (2), 99–108. <https://doi.org/10.3152/147154604781766049>.
- Panico, F., Garibay, C., 2014. Aportaciones de una historia antropológica al estudio del conflicto en un enclave minero: el caso Caballo Blanco, Veracruz, México. In: Paz, M.-F., Risdell, N. (Eds.), *Conflictos, conflictividades y movilizaciones socioambientales en México: problemas comunes, lecturas diversas*. UNAM, Mexico City, pp. 91–110.
- Picciotto, R., 2004. Aid and conflict: the policy coherence challenge. *Conflict Secur. Dev.* 4 (3), 543–562. <https://doi.org/10.1080/1467880042000320069>.
- Pilke, R., Stocchetti, M., 2016. Inequality and poverty. The ill-fitting pieces in the EU's development partnerships. *Reg. Cohes.* 6 (1), 1–22. <https://doi.org/10.3167/reco.2016.060101>.
- Ramirez-Macias, J.-L., 2017. Follow-up monitoring and adaptive management in EIA process: A case study in the new port of Veracruz construction phase. In: IAIA17 Conference Proceedings. N.P.
- Retief, F., 2010. The evolution of environmental assessment debates: critical perspectives from South Africa. *J. Environ. Assess Pol. Manag.* 12 (4), 375–397. <https://doi.org/10.1142/S146433321000370X>.
- Ruiz Leotaud, V., 2018. Hundreds Protest in Veracruz against Mining Development. <https://www.mining.com/hundreds-protest-veracruz-mining-development/>.
- Sanchez, L., Mitchell, R., 2016. Conceptualizing impact assessment as a learning process. *Environ. Impact Assess. Rev.* 62, 195–204. <https://doi.org/10.1016/j.eiar.2016.06.001>.
- Scullion, J., et al., 2011. Evaluating the environmental impact of payments for ecosystem services in Coatepec (Mexico) using remote sensing and on-site interviews. *Environ. Conserv.* 38 (4), 426–434. <https://doi.org/10.1017/S037689291100052X>.
- Secretaría de Finanzas y Planeación, 2017. Plan Veracruzano de Desarrollo 2016–2018: elaboración de Programas Sectoriales, Especiales y Regionales. <http://www.veracruz.gob.mx/wp-content/uploads/sites/2/2017/01/Presentacion-Lineamientos-PbR.pdf>.
- Siitonen, L., 2016. Theorising politics behind policy coherence for development (PCD). *Eur. J. Dev. Res.* 28, 1–12. <https://doi.org/10.1057/ejdr.2015.76>.
- Singh, G., et al., 2018. Scientific shortcomings in environmental impact statements internationally. *PeerJ Preprints* 6 <https://doi.org/10.7287/peerj.preprints.27409v1>.
- Spangenberg, J., 2017. Hot air or comprehensive Progress? A critical assessment of the SDGs. *Sustain. Dev.* 25, 311–321. <https://doi.org/10.1002/sd.1657>.
- Tejada, J.-C., et al., 2014. Present status of the implementation of strategic environmental assessment in Mexico. *J. Environ. Assess. Pol. Manag.* 16 (2), 1–20. <https://doi.org/10.1142/S1464333214500215>.
- Thede, N., 2013. Policy coherence for development and securitisation: Competing paradigms or stabilising North–South hierarchies? *Third World Q.* 34 (5), 784–799. <https://doi.org/10.1080/01436597.2013.800752>.
- UNDP, 2016. Mapping Mining to the Sustainable Development Goals: An Atlas. UNDP, New York.
- UNDP, 2018. Managing Mining for Sustainable Development: A Sourcebook. UNDP, Bangkok.
- United Nations, 2020. The 17 Goals: History. <https://sdgs.un.org/goals> (Accessed 21 July 2020).
- Wilder, M.O., et al., 2016. Desalination and water security in the US–Mexico border region: assessing the social, environmental and political impacts. *Water Int.* 41 (5), 756–775. <https://doi.org/10.1080/02508060.2016.1166416>.
- Wilkins, H., 2003. The need for subjectivity in EIA: discourse as a tool for sustainable development. *Environ. Impact Assess. Rev.* 23, 401–414. [https://doi.org/10.1016/S0195-9255\(03\)00044-1](https://doi.org/10.1016/S0195-9255(03)00044-1).
- Zeigermann, U., 2020. Policy coherence for sustainable development: a promising approach for human security in fragile states. *J. Peacebuild. Dev.* <https://doi.org/10.1177/1542316620909077>.



**Harlan Koff** is Professor of Social Sciences at the University of Luxembourg and GAMMA-UL Chair in Regional Integration and Sustainability at the Instituto de Ecología (INECOL) in Xalapa, Mexico where he coordinates research on policy coherence for development. He is also Senior Research Associate in the Department and Politics and International Relations at the University of Johannesburg with which he collaborates as Co-president of the Consortium for Comparative Research on Regional Integration and Social Cohesion-Social Elevation (RISC-RISE). He is co-editor of the scientific journal *Regions & Cohesion* (Berghahn Journals) and his research focuses on international development, migration, regional integration and sustainability.