

# Role of the public prosecutor's office experts in the environmental licensing of the Mexilhão Project, São Paulo, Brazil

*A atuação dos peritos do Ministério Público no  
licenciamento ambiental do Projeto Mexilhão, São  
Paulo, Brasil*

José Eduardo Viglio <sup>1</sup>

Lúcia da Costa Ferreira <sup>2</sup>

<sup>1</sup> PhD in Social Sciences, Associate professor, Center for Environmental Studies  
and Research, University of Campinas (Unicamp), Campinas, SP, Brazil  
E-mail: eduviglio@gmail.com

<sup>2</sup> PhD in Social Sciences, Full Researcher, Center for Environmental Studies  
and Research, University of Campinas (Unicamp), Campinas, SP, Brazil  
E-mail: luciacf@unicamp.br

doi:10.18472/SustDeb.v13n1.2022.41279

Received: 04/01/2022  
Accepted: 22/03/2022

ARTICLE – VARIA

## ABSTRACT

The constitutional role and authority of the Public Prosecutor's Office (MP) as an enforcer of law warranted the MP protagonism in the enforcement of environmental legislation and accountability of environmental agencies in Brazil. The MP instituted regional offices to tackle the environmental issue and established a team of experts to provide technical support. This research analyzes the participation of the São Paulo State Public Prosecutor's Office (MPSP) and the Federal Public Prosecutor's Office (MPF) experts in the environmental licensing of the Mexilhão Project. The project was located in the coastal region of the state of São Paulo and initially aimed to reduce by half the volume of natural gas imported by the country. Based on the analysis of documents and interviews, this paper shows that there were different interpretations and framings among the MP experts concerning environmental impacts and risks of the project. This study also discusses MP's influence on the decisions of the federal environmental agency about the Mexilhão Project.

**Keywords:** Environmental assessment. Decision making. Environmental expertise. Oil&gas. Brazil.

## RESUMO

*O papel e atribuições constitucionais do Ministério Público (MP) como fiscal da lei, garantiu a este um protagonismo no enforcement da legislação e accountability das agências ambientais no Brasil. Para tanto, o MP implementou promotorias temáticas e regionais na área ambiental e criou equipes de peritos para oferecer embasamento técnico e científico. Este artigo analisa a participação dos peritos do Ministério Público do Estado de São Paulo (MPSP) e do Ministério Público Federal (MPF) no processo de licenciamento ambiental de um empreendimento do setor de petróleo e gás, intitulado*

*“Projeto Mexilhão”, que foi instalado na Baía de Santos e na região costeira do estado de São Paulo. A partir de análise documental e de entrevistas, o trabalho evidencia diferentes interpretações e enquadramentos dos riscos e impactos ambientais do projeto entre os experts do MP. O trabalho discute ainda as implicações da atuação do Ministério Público nas decisões do órgão licenciador federal acerca do empreendimento.*

*Palavras-chave: Licenciamento Ambiental. Processo decisório. Expertise ambiental. Petróleo e gás. Brasil.*

## 1 INTRODUCTION

With the process of re-democratization instituted in the Brazilian Federal Constitution of 1988, the implementation of works and activities potentially causing environmental impacts had to adapt to the new conditions of the Brazilian environmental sphere. This sphere was shaped by the institutionalization of environmental policies, by the public and legal recognition of the environment as a legitimate demand, and by the consolidation of new social players, including the experts of the environmental subject (ALONSO *et al.*, 2001; ALONSO *et al.*, 2007; FERREIRA, 1996; HANNIGAN, 2006; HOCKSTETLER; KECK, 2007).

In addition to the institutional structures of the executive, legislative, and judicial branches, the Public Prosecutor's Office (*Ministério Público* – MP) gained autonomy in defence of diffuse and collective rights.<sup>1</sup> The constitutional role and authority as an enforcer of law warranted the MP protagonism in the enforcement of the Constitution and Environmental Legislation (ALONSO *et al.*, 2001; CRAWFORD, 2009a, 2009b; FURUITI 2009; MCALLISTER, 2008, 2009). In addition to its supervisory role, the MP has constituted an alternative instance to the judicial branch in the mediation and regulation of environmental conflicts (CAMACHO; PETERLINI; FERNANDEZ, 2018; VILAÇA, 2017).

Through its authority and the instruments at its disposal, the MP has been involved in the environmental licensing of works and activities and may or may not employ the judicial route to perform its functions (HOFFMANN, 2015). In order to carry out this mission, the MP implemented regional prosecutor's offices dealing with environmental issues and established teams of experts to provide the first elements of conviction (SOUZA, 2013).

Environmental Licensing is the main instrument used in Brazil to exercise prior control and monitor activities that potentially degrade the environment. Environmental licensing has become one of the most controversial topics in the country. Entrepreneurs criticize the unjustified delay and recurrent judicialization of the licensing process and the excessive discretion in analyzing environmental studies from the technicians involved in the licensing. The MP's interventions in licensing also became a focus of criticism by managers associated with licensing bodies. According to them, the participation of the MP has led to increased demands for the administrative structure of the licensing body, requiring the preparation of reports, technical reports, and the provision of information (ABEMA, 2013; VIEIRA *et al.*, 2012).

This article analyzes an empirical case involving the São Paulo State Public Prosecutor's Office (MPSP) and the Federal Public Prosecutor's Office (MPF) in environmental licensing at an oil enterprise installed in the Northern state coast of S<sup>2</sup>. This enterprise was Petrobras' Mexilhão<sup>3</sup>. The project was proposed in 2005 to produce 15 million m<sup>3</sup> of natural gas per day, thus contributing to the country's self-sufficiency in natural gas. The enterprise, which began operations in 2011, was installed on the Atlantic coast of the state of São Paulo, a region characterized by its high biodiversity and environmental sensitivity.

In addition to this introduction, the article is structured as follows: Item 1 describes the methodology used. Item 2 contextualizes the Environmental Licensing process in Brazil and the legal and institutional instruments available to the MP for involvement in this process. Then, Item 3 presents a discussion on the expert activity within the scope of the MP, the role of its experts, and the main challenges found. Item 4 presents the Mexilhão project and its licensing structure. Items 5 and 6 analyze the

participation of the MPSP and MPF experts in the environmental licensing of the Mexilhão Project. Finally, Item 7 outlines some conclusive elements about the involvement of MP experts in the analyzed environmental licensing.

## 2 METHODOLOGY

This work is part of and the result of broader research that analyzed actors and conflicts around the environmental licensing of the Mexilhão Project. It is based on the analysis of official documents and semi-structured interviews (BAYLEY, 2008; BERNARD, 2013). The analyzed documents were made available: i) by the licensing agency<sup>4</sup> – Environmental Impact Assessments and Reports (EIAs-EIRs) of the Mexilhão project, technical opinions from the federal licensing agency and São Paulo State environmental agencies, responses from the entrepreneur and licensing agency to the questions raised by the other actors participating in the licensing, Minutes and videos of Public Hearings; ii) MPSP<sup>5</sup> – Civil Inquiry containing the technical opinions of experts and prosecutors' actions in the licensing process; iii) Federal Public Prosecutor's Office – Administrative Proceedings containing the documents produced by the MPF within the scope of the licensing.

We interviewed two MPSP experts who worked in the Civil Inquiry related to the Mexilhão project and two MPF experts working in the respective Administrative Proceeding. For ethical considerations, the names of the experts were not identified in this work.

This set of materials, including the transcribed interviews, was analyzed using the content analysis technique, whose purpose is the objective, systematic, and qualitative content description (BARDIN, 1977).

## 3 ROLE OF THE PUBLIC PROSECUTOR'S OFFICE IN THE ENVIRONMENTAL LICENSING

The Environmental Impact Assessment (EIA) – a process of examining the future consequences of a present or proposed action – has the support of public and private decisions about their environmental implications as one of its objectives. The term Environmental Impact Assessment (EIA) entered the environmental terminology and the literature via the pioneering legislation that created this instrument for environmental planning, the National Environmental Policy Act (Nepa), the national environmental policy law of the United States. The EIA meets a need to establish mechanisms for social control and participatory decision on economic development projects and initiatives (SÁNCHEZ, 2013).

In Brazil, the EIA was incorporated into Brazilian policy and legislation through Environmental Licensing; however, it was restricted to the environmental assessment of potentially polluting projects, not expanding its scope so as to assess State plans, programs, and policies. Licensing depends on the existence of an EIA, which is an essential document in the entire environmental impact evaluation process. Based on this Assessment and its respective Environmental Impact Report (EIR), major decisions will be made regarding the environmental feasibility of a project, the need for mitigating or compensatory measures, and the type and scope of these measures (SÁNCHEZ, 2013).

Licensing is defined as the administrative proceeding by which the competent environmental agency licenses the location, installation, expansion, and operation of enterprises and activities that actually or potentially cause environmental impacts (CONAMA RESOLUTION N°. 237/1997<sup>6</sup>). The environmental license for enterprises and activities considered effective or potential causes of significant degradation of the environment will depend on the EIA-EIR, which will be publicized, guaranteeing the holding of public hearings, when applicable, following the regulations (CONAMA RESOLUTION N°. 237/1997). The EIA constitutes a technical document that substantiates the environmental impact assessment. To that end, it must have a multidisciplinary character and aim at **preventive control of environmental**

**damages.** When not dealing with significant impacts, the licensing process can be based on more simplified environmental assessments in federal, state and municipal legislation, such as the Simplified Environmental Study and Report (EAS-RAS).

The environmental licensing procedure of an enterprise depends on obtaining a prior license (PL), installation license (IL) and operation license (OL), issued in this sequence. The IL or OL is issued after analysis of the project and compliance with the conditions established in the prior license (BRAZIL, 2020). First, the **(PL)** approves the location and project of the enterprise in the preliminary planning phase, attesting to its environmental feasibility. Next, the **Installation License (IL)** authorizes its installation under the specifications contained in the approved plans, programs and projects. Finally, the **Operation License (OL)** authorizes the operation of the activity, work or enterprise after verifying effective compliance with the environmental control measures and conditions determined in the previous licenses.

Despite several gains regarding environmental control in the country (SÁNCHEZ, 2013), environmental licensing and the EIA-EIR still present a set of bottlenecks and limitations that challenge their effectiveness. Regarding the environmental assessments, including the EIA-EIR, some of the problems are related to; i) the methodological approach and incomplete data collection; ii) the lack of connection between the environmental diagnosis, the analysis of impacts, and the mitigation proposals; iii) studies that are extensive and with information that is often irrelevant to decision-making (DUARTE; DIBO; SÁNCHEZ, 2017; HOFFMANN, 2015).

Regarding the licensing process as a whole, the criticism is mainly focused on: i) the lack of clarity and direction of environmental agencies in defining the scope of an environmental study; ii) the excess of conditions and lack of monitoring of their effectiveness; iii) the multiplicity of players with discretionary power; iv) the frequent judicialization of cases; v) the lack of structure and personnel in environmental agencies; v) the situation of institutional and normative confusion, permeated by subjectivity and lacking transparency; vi) excessive bureaucracy and poor management (HOFFMANN, 2015).

The questioning should also be linked to the inability of EIAs to effectively influence decision-making because they are often conducted before and out of environmental licensing. This constitutes the external pressures on the licensing agencies to grant environmental licenses (VIGLIO; MONTEIRO; FERREIRA, 2018; ZHOURI; OLIVEIRA, 2012).

Based on the constitutional legitimacy conferred by the 1988 Brazilian Federal Constitution and on the instruments at its disposal, the MP started to monitor the environmental licensing processes to verify the compliance of licensing agencies with environmental legislation (FURUITI, 2009). The Civil Inquiry (CI) and the Administrative Proceeding (AP) are instruments used by the MP in licensing<sup>7</sup>. The CI is instituted whenever the MP indicates a right has been harmed or is at risk of harm, and the reported case may lead to a future filing of public civil action (MPF, 2020). According to Gravronski (2006), there is no substantial difference between the CI and the AP since both serve to collect elements for the eventual filing of a lawsuit, issuing recommendations, and entering into a Conduct Adjustment Agreement (CAA). Within the scope of the MPF, there is an understanding that Administrative Proceedings (AP) should be instituted when there are not enough elements to support the institution of Civil Inquiries (CI). It should be reserved for more severe cases or cases with a possibility of different legal consequences, such as the filing of public civil action. The Public Civil Action, governed by Law no. 7,347/85, is a particular type of legal action aimed at protecting diffuse and collective rights by an initiative of the MP, Public Defender's Office, Federal, State and Municipal governments, autonomous agencies, state-owned companies, foundations or mixed-capital companies, as well as associations with specific purposes (TEPEDINO, 2017).

The National Organic Law of the Public Prosecutor's Office (Law 8,625/93) also gives the MP the authority to issue the so-called Recommendations. The Recommendation constitutes an administrative action through which the MP repeatedly requests the addressee to take measures to prevent the repetition

or determine the cessation of any violations of the legal order. The recommendation has no coercive nature and, to be complied with, it depends, above all, on the conviction resulting from its reasoning.

In the scope of environmental licensing, the MP can also enter into a Conduct Adjustment Agreement (CAA) so that, for example, the environmental conditions established for the granting of licenses are complied with. In general, the CAA is a formal agreement between the entity causing the environmental damage and the environmental authority, through which the causing entity assumes the duty to adapt its conduct to legal requirements. This one is subject to inspection by the latter, under penalty of incurring the sanctions provided for in the instrument itself in case of non-compliance (FURUITI, 2009). Thus, the CAA constitutes an extrajudicial instrument that guarantees the processes of environmental licensing and negotiation and resolution of environmental conflicts in the country (MCLLISTER, 2008).

### 3.1 EXPERT ENVIRONMENTAL INSPECTION IN THE PUBLIC PROSECUTOR'S OFFICE

An expert is defined according to their educational training and institutional position. However, it is precisely the participation in the decision-making process that characterizes and defines the expert and their scientific examination and inspection. They are summoned to clarify, justify, or substantiate a decision, even if partially. Such knowledge supports the decision, although it does not constitute the decision itself (JERÓNIMO, 2006; ROQUEPLO, 1997). The experts' knowledge must meet procedural requirements, such as theoretical and conceptual consistency, and be based on methodologies accepted by their community (BOSWELL, 2009).

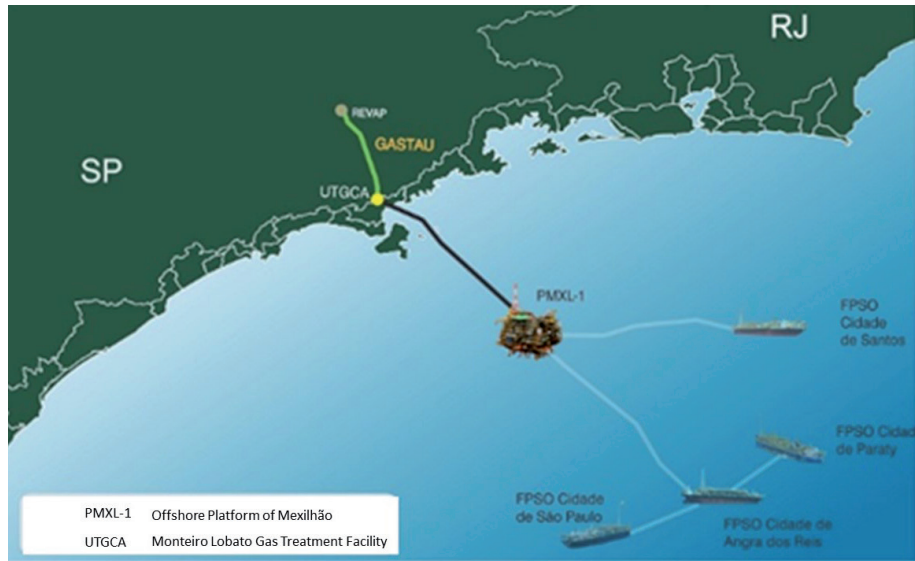
The expert environmental inspection in the MP is a procedure used to obtain evidence and provide support in judicial and extrajudicial proceedings. Verifying environmental damage is crucial for solving an issue, which, as a rule, must be verified through expert environmental inspection. This is a means to obtain evidence governed by Articles 420 to 439 of the Civil Proceeding Code. In Brazil, expert environmental opinion is requested in the three spheres of Law. In the civil sphere, in general, expert opinion is requested by public prosecutors and attorneys or by judges at the procedural stage, mainly for the assessment of environmental damage (CUNHA, 2005).

The MP uses experts admitted by public service entrance exams and experts that are liberal professionals and academics to obtain reports to be added to its proceedings.

Thus, the conclusions obtained from the experts, through reports and technical opinions, are in most cases the main bases for convincing judges and prosecutors and essential elements to support judicial and extrajudicial decisions. Given the importance of expert evidence in the context, limits and difficulties in obtaining such evidence and in the expert work prevent the lawsuit's progress and its conclusion (FREITAS, 2006). Some of these bottlenecks involve; i) insufficiency of experts admitted by public service entrance exams considering the high demand for environmental opinions; ii) insufficiency of financial resources to carry out technical analyses; iii) the MP's difficulty in mobilizing external experts prepared to perform the task; iv) lack of multidisciplinary character in environmental reports (FREITAS, 2006). In addition, the production of knowledge for the decision-making process imposes or accentuates several constraints on the *work of experts*, which can interfere with and compromise the production and validation of the data generated. The time pressure for the production of scientific data forces experts to work quickly and with the knowledge available when they need to issue their opinion (JERÓNIMO, 2006; ROQUEPLO, 1997).

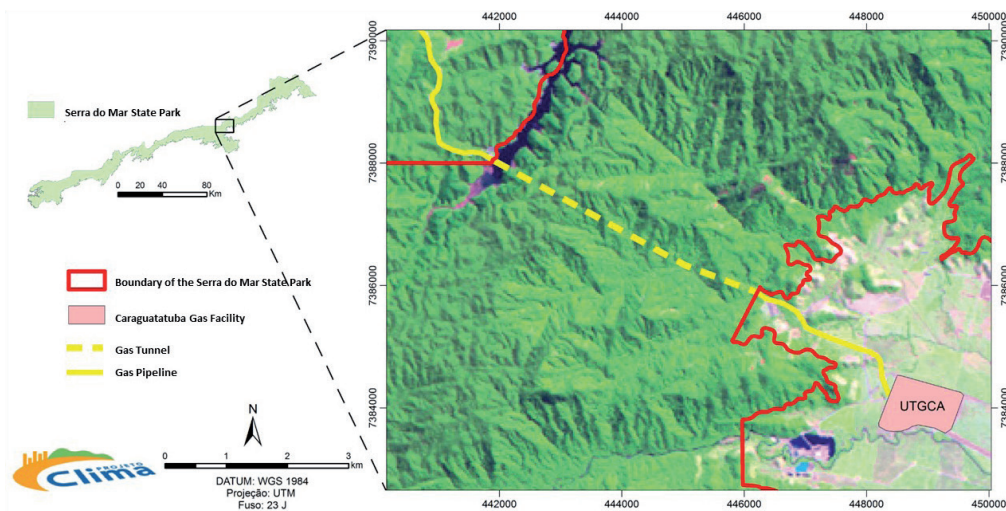
## 4 ENVIRONMENTAL LICENSING OF THE MEXILHÃO PROJECT

The Mexilhão project was announced in 2005 to contribute to the country's self-sufficiency in natural gas with the production of 15 million m<sup>3</sup>/day. As shown in Figure 1, the Mexilhão project involved the installation of several items. First, a fixed offshore platform<sup>8</sup> (PMXL-1), located about 160 kilometres from the coast. In addition, an offshore pipeline for the flow of gas connecting the platform to the coast. Next, a gas treatment unit called Caraguatatuba Gas Treatment Unit (UTGCA) is installed 1 km from the Serra do Mar State Park (Pesm) within its Buffer Zone. Lastly, a gas pipeline to take the gas from the UTGCA to the municipality of Taubaté/SP, called Caraguatatuba-Taubaté Gas Pipeline (Gastau), with a length of 97 km, with 5 km built via a tunnel to cross the Pesm (Figure 2).



**Figure 1 |** UTGCA and Gastau crossing the Pesm

Source: *Comunicação Bacia de Santos (2021)*<sup>9</sup>



**Figure 2 |** UTGCA and Gastau crossing the Pesm

Source: *Prepared by the authors.*

The project was part of significant government programs for economic growth and energy self-sufficiency, such as the Growth Acceleration Program (PAC)<sup>10</sup>. and the Gas Production Anticipation Plan (Plangas)<sup>11</sup>. The total amount invested in Mexilhão was around US\$ 2.2 billion (O ESTADO DE S. PAULO, 2011). This context granted the enterprise political and economic credentials to legitimize it for public opinion. In addition to building the Gastau tunnel to cross the PESH, Petrobras leveraged the importance of natural gas as a less polluting fuel in the transition to a low-carbon economy.

Brazil's Federal Environmental Agency (Ibama), which was responsible for the environmental licensing of Mexilhão, divided the licensing into three distinct processes:<sup>12</sup> i) offshore part (PMXL-1 and offshore pipeline), which was licensed by the General Petroleum and Gas Coordination (CGPEG)<sup>13</sup>; ii) UTGCA, which was licensed by the Coordination of Nuclear Energy and Pipelines (Coend)<sup>14</sup>; iii) Gastau, which Coend also licensed<sup>15</sup>. Mexilhão's environmental licensing processes began in 2005, and its last environmental operation licenses were granted in 2011.

Due to the national fuel supply being considered a public utility<sup>16</sup> The Mexilhão project was authorized by environmental agencies to be licensed in areas with restrictions for this type of activity. Such restrictions were established both by the Ecological Economic Zoning (ZEE) of the North Coast<sup>17</sup> and by the Pesh Management Plan.

Due to the significant dependence on offshore oil and gas reserves in the Brazilian context, there has been a spatial overlap between oil activities and infrastructure and areas of relevance for environmental conservation, such as the Atlantic Forest and its associated coastal ecosystems. The Atlantic Forest is considered one of the world's biodiversity hotspots, as it is one of the wealthiest areas as to biodiversity and endemism on the planet and, at the same time, one of the most threatened and with a tremendous loss of habitat (GALINDO-LEAL; C MARA, 2003; MYERS *et al.*, 2000). It is the second-largest tropical forest on the American continent and originally occupied an area of 148,194,638 ha along the Brazilian coast, penetrating as far as eastern Paraguay and northeastern Argentina in its southern portion (GALINDO-LEAL; C MARA, 2003; RIBEIRO *et al.*, 2009). Currently, when all native forest fragments over three hectares are added together, there is only 12.5% of the original vegetation remaining in Brazilian territory (FUNDAÇÃO SOS MATA ATL NTICA; INPE, 2015), with only 14.4% of this remnant being legally protected (RIBEIRO *et al.*, 2009).

## 5 ROLE OF THE SÃO PAULO STATE PUBLIC PROSECUTOR'S OFFICE EXPERTS IN THE LICENSING OF THE MEXILHÃO PROJECT

The MPSP has worked on the North Coast of the state of São Paulo since 1997 through a Regional Environmental Prosecutor's Office in Caraguatatuba. It contributed to learning and approach to the environmental issues of the North Coast of the state of São Paulo, with special attention to social conflicts and anthropic pressures concerning the Atlantic Forest remnants.

The MPSP experts participated in the licensing process through Civil Inquiry number 23/05. The MPSP instituted the investigation proceeding in August 2005, when the Mexilhão enterprise was still a project in the initial licensing phase.<sup>18</sup> The CI aimed to determine the socio-environmental impacts arising from this project given the lack of adequate infrastructure in the cities of the North Coast to support the consequences arising from these activities: population increase, with pressure to occupy areas at risk or environmentally protected areas; the increase in vehicle traffic; as well as the insufficiency of basic sanitation and health services. In this context, the Public Prosecutor's Office-CAO Operational Support Center was requested to conduct technical analysis and monitor the project's licensing. The need for experts involvement was also justified by the absence of environmental agencies of the state of São Paulo in conducting the Mexilhão licensing process.

The MPSP team of experts that worked on the licensing, consisting of biologists and forestry engineers, chose the fragmentation of the Mexilhão environmental licensing into three different processes

(offshore part, UTGCA, and Gastau) as the main focus of criticism. According to them, through a Technical Opinion<sup>19</sup>, fragmenting the licensing of the same enterprise into stages would be harmful to the required environmental assessment. It would result in an unacceptable underestimation of environmental impacts, disregarding due assessments of cumulative and synergistic effects. Cumulative effects are the sum of effects resulting from one action or several simultaneous actions. In comparison, synergistic effects can be defined as the phenomenon represented by the total impact of one action or more actions so that the effect is greater than the sum of the impacts assessed individually.<sup>20</sup> (DEAT, 2004).

Despite being provided for in Conama Resolution No. 01/86, which provides for procedures related to the Environmental Impact Assessment in Brazil, such assessments have been systematically disregarded in the EIAs-EIRs of enterprises in Brazil and other countries (HOFFMAN, 2015). Cooper and Sheate (2004) seek to explain this mismatch by pointing out that the concepts of cumulative and synergistic effects are generally not clearly defined in legislation. Therefore, managers have uncertainties about the meaning of such effects and how to assess them.

In the analyzed case, despite Ibama requesting this type of assessment, in the Terms of Reference – document that informs the guidelines for preparing the EIA/EIR – such guidelines were not complied with. The MPSP experts stated in a technical report<sup>21</sup>, that Ibama had passively accepted such failure to comply with the requirement to carry out cumulative and synergistic effect assessments. In the same report, according to the MPSP experts, both the fragmentation of the enterprise licensing and the absence of analyses of cumulative and synergistic effects between its parts and of this with other activities that were planned for the region<sup>22</sup> “made a conclusive technical and legal opinion on environmental feasibility impossible.”

Thus, the scientific approach of systemic ecology, which establishes a cybernetic and integrated representation of ecological systems, led and guided the critical focus of MPSP experts concerning the environmental implications of the enterprise. This theoretical orientation has prevailed among MPSP experts<sup>23</sup>. According to one of the MPSP experts interviewed, this focus has been shared and reinforced by them in their daily activities. According to this expert:

These are constant partnerships, frequent conversations, the need for involvement, and an expert's opinion from another region of the state for a report that we are preparing. We help a colleague without even signing that opinion, leading to a common technical and ideological path (INTERVIEW WITH MPSP EXPERT IN MAY 2012).

However, according to the same expert, not all prosecutors follow and support that criticism focus. Thus, the support of the technical opinions by the north coast prosecutor's office and the consequent conduct of the CI was only possible, according to him, due to the functional independence of each MP prosecutor<sup>24</sup>.

Following the line of interpretation of the MPSP experts, prosecutors from this agency and prosecutors from the MPF issued a Recommendation to Ibama to persuade it to suspend environmental licenses already issued and not grant new licenses until the questions in the technical opinions, prepared by the MPSP experts, were answered. However, the lack of answers regarding the locational alternative of the Gastau route proposed by the MPSP and Aeronautics Institute of Technology (ITA) researchers was a problem. Besides, there was a request for assessment of cumulative and synergistic effects, as shown in the excerpt below:

Until the submission and evaluation of the necessary complementary studies and the alternative location of the Gastau route, mentioned in previous items (1 and 2), the prior license for offshore prospecting is not granted, suspending the already granted prior licenses and the installation license for the earthworks of the UTGN (Natural Gas Treatment Unit) (RECOMMENDATION NO. 59/2007 – FEDERAL PUBLIC PROSECUTOR'S OFFICE AND SÃO PAULO STATE PUBLIC PROSECUTOR'S OFFICE).



Although an MPF Prosecutor participated in issuing the Recommendation, the interpretation of the MPF experts differed from that of the MPSP experts, as will be discussed in the next topic. Nevertheless, the MPF experts did not see significant problems in these studies that would compromise the environmental feasibility of the enterprise. Ibama expressed its opinion on the recommendation, stating that the licensing process was being conducted properly.

Two years after the Recommendation issued by the MP, in 2009, the Secretariats for the Environment and Development of the state of São Paulo announced the preparation of an environmental assessment of the North Coast through the Strategic Environmental Planning of the Port, Industrial, Naval and Offshore Dimension on the São Paulo State Coast (Pino). According to the document published in 2010, it was a systematic, continuous and voluntary procedure for assessing the synergistic effects of the grouping of Enterprises, Projects and Investment Intentions, all with a structuring nature, functional among themselves, of great magnitude, public and private (SMA, 2010). Also, according to the document, the Strategic Environmental Assessment (SEA) constituted support to decision-making processes of public or private origin, integrating socio-environmental issues into planning and investment strategies to achieve sustainable processes (SMA, 2010).

Although the PINO was published only in 2010, with no addition of new information for the licensing of the Mexilhão Project, this SEA, according to Malvestio (2013), played an essential role in organizing and presenting data and projections that began to inform planners both in the state and municipal levels. Furthermore, it influenced decisions after the SEA (in the scope of environmental planning and licensing), thus contributing to coordination between structuring projects and public planning by the state and municipal governments.

In 2012, after the Mexilhão enterprise began operation, the MPSP experts issued a new technical opinion<sup>25</sup>, in which they concluded that Ibama improperly issued its environmental licenses. According to the opinion, the fragmentation of the licensing process tainted the license with irremediable defects and the technical omissions and distortions made the EIA a mere piece of fiction. Therefore, in 2014, the CI was registered in the MPSP computerized system with another number (14.0701.0000199/2014-4), discarding the old number (CI No. 23/05), and starting to deal with the monitoring of the environmental conditions of the projects.

This MPSP CI was definitively shelved in 2017 on the grounds of; i) sufficiency of administrative action by Ibama to demand compliance with the environmental conditions of the licensing of projects; ii) no failure of the supervisory body in its duties was found that justifies the ministerial intervention; iii) existence of a civil inquiry initiated by the Federal Public Prosecutor's Office that investigates the same facts investigated herein.

The Public Prosecutor's Office started to demand assessments of cumulative and synergistic effects in the licensing of new projects on the north coast of São Paulo, as in the cases of the licensing of Pre-Salt Stage II and the licensing of the expansion of the Port of São Sebastião/SP. In the first case, such assessment was incorporated into the licensing, by IBAMA's imposition, following the recommendation of the Public Prosecutor's Office. In the second case, the requirement was due to a judicial decision in a public civil action initiated by the Public Prosecutor's Office.

## **6 ROLE OF THE FEDERAL PUBLIC PROSECUTOR'S OFFICE EXPERTS IN THE LICENSING OF THE MEXILHÃO PROJECT**

The MPF participated in the environmental licensing of Mexilhão, initially through Administrative Proceeding No. 1.34.014.000417/2005-01, which was instituted in 2005, through representation by Associação Caiçara Juqueriquerê – Acaju, from Caraguatatuba/SP.

Differently from the MPSP, the MPF experts did not see the fragmented licensing of Mexilhão as an obstacle to its environmental viability assessment. On the contrary, in their opinions, they sought

to point out alleged flaws in the environmental studies and suggest measures to correct them, as evidenced in the excerpt below from the technical opinion prepared by the experts:

The signatories understand that seasonality should always be considered by carrying out primary surveys in at least two campaigns in seasons with different climates, representing a determining factor for the quality of the results obtained. Concerning the tracing and assessing impacts on vegetation cover, fauna and conservation units, the EIA complied with the terms of reference, and it was only necessary to reassess its classification as to magnitude, importance and significance (PRSP/MPF TECHNICAL OPINION NO. 070/2006).

Thus, the MPF experts' work was characterized by a corrective approach to particular and specific aspects of the environmental studies. According to them, the EIAs-EIRs "were well done, and the data there were relevant" (INTERVIEW WITH MPF EXPERTS). From their perspective, the problems pointed out by the MPSP, especially those related to cumulative and synergistic impacts, would not be addressed within the scope of environmental licensing but through other planning instruments, such as the Strategic Environmental Assessment (SEA). According to them, insisting on carrying out this type of assessment in the context of licensing constitutes a professionally exhausting and unproductive strategy (INTERVIEW WITH MPF EXPERTS).

In fact, in Brazil, the Environmental Impact Assessment (EIA) was restricted to the licensing of projects, thus abstracting its dimension of planning and support to decisions concerning policies, plans and programs (SÁNCHEZ, 2017). According to Pellin et al. (2011), this restriction has led to the underuse of EIA as a planning tool and frustrated expectations that project EIAs provide answers that are not their responsibility, overloading and delegitimizing them. Based on this understanding, the MPF experts stated in an interview that it would not be the role of the licensing agency to draft and develop strategic planning actions:

This is not the role of the licensing agency. It is an enterprise licensing agency and not a place to think and develop strategic planning. I cannot talk to an entrepreneur and say that he cannot start the work here because it may be that more people come to this city. Not even the licensing agency can say to the entrepreneur: I will license only you, and I will never license anyone here again [...]. This is not the role of the licensing agency, it is the role of a state policy (INTERVIEW WITH MPF EXPERT).

When concluding on the project's environmental feasibility, the MPF experts took into consideration the existence of measures to mitigate the impacts described in their corresponding EIAs-EIRs, emphasizing the construction of the tunnel through which the gas pipeline would cross the Serra do Mar State Park: "So, you see: the UTGCA was going to be built in an area that has grass, the pipeline would be built through a tunnel to cross the Serra do Mar State Park and not interfere with it, so we need to weigh the pros and cons more impartially" (INTERVIEW WITH MPF EXPERT).

In addition to the environmental aspects mentioned above, the MPF experts considered other elements – of social and economic nature – in their interpretations of the enterprise's viability. Some of these elements include the strategic importance of Petrobras, natural gas as a less polluting fuel, and the possibility of generating wealth for the country, as explained in this interview excerpt:

Petrobras has super-competent researchers fantastic technical teams that spend years researching new sources of oil and gas for the country and find viable production fields to afford wealth to the country. Of course, you have to think that this is important. We cannot disregard that and think there will be a country with only an ecological perspective focused only on preservation. The environment is one factor to consider (INTERVIEW WITH MPF EXPERT).

In 2012, the administrative proceeding discussed here was converted into a civil inquiry with the same number. The MPF CI was shelved in 2019 on the grounds of the following arguments: i) infeasibility of

analyzing the licensing of the three parts of the Mexilhão in a single proceeding; ii) regular licensing, with pending issues in specific conditions in each of the parts, which could be monitored and inspected in specific monitoring procedures already in place; iii) No need for the MPF to adopt any other judicial or extrajudicial measure. However, in the same year, 2019, a new MPF Ordinance (No. 29, MAY 16, 2019) determined the initiation of a Civil Inquiry to verify effective compliance with the environmental conditions referring to Gastau.

## 7 CONCLUSION

This article presents analyses and discussions that contribute to a better understanding of the role of the Public Prosecutor's Office in the sphere of environmental licensing in Brazil. First, it was evident that within the same category of player (Public Prosecutor's Office), divergent views and positions coexist concerning the potential environmental impacts and (in)viability of projects in the country. Nothing is surprising in this regard, considering the situated, provisional and controversial nature of technical-scientific knowledge (BÄCKSTRAND, 2003; JASANOFF, 2003), especially when dealing with topics with high levels of uncertainty. Furthermore, the different scientific and disciplinary framings often lead to different – and not necessarily reconcilable – bodies of knowledge about environmental phenomena.

Consistently, the diversity and fragmentation of science can provide accommodation and support for a range of positions and interpretations (SAREWITZ, 2004). Such diversity can lead to different framings for the same problem<sup>26</sup> (BENFORD; SNOW, 2000; VIGLIO et al., 2019). Therefore, the existence of discretion in the analyses of environmental studies by the technicians involved, as explained by critics of the licensing process, can be understood, in part, due to the inherent characteristics of technical-scientific production.

Thus, the mobilization of scientific concepts and notions that justified and reinforced the absence of an integrated and systemic treatment for assessing the environmental impacts of the Mexilhão project – and its possible environmental unviability – was a characteristic feature of the MPSP's expert work. The concepts of synergism and cumulativeness were key elements in the construction of the MPSP's technical narrative. On the part of the MPF, a divergent technical position was based, above all, on a cost-benefit perspective and on the recognition of trade-offs involving environment and development. However, the analytical results stemming from this framing can be used to justify activities and enterprises that put even more pressure on key biomes, such as the Atlantic Forest, as analyzed in this work.

The MPSP's role was crucial to problematize the content of environmental impact assessments and the conduct of licensing from an ecosystem approach. Such recurring understandings and questions among MPSP experts have contributed to the implementation of substantial revisions and modifications in licensing practices. Here, in later years, we note the obligation of assessing synergistic and cumulative effects for new oil enterprise projects in the region. In addition, we also point out the establishment of new rules that expressly prohibit the fragmentation of environmental licensing, as occurred in the state of Minas Gerais through Normative Deliberation No. 217/2017. It established criteria for defining the modes of environmental licensing of enterprises and activities that use environmental resources in the state of Minas Gerais.

Finally, in order to understand the participation and contribution of the Public Prosecutor's Office in environmental licensing, in addition to its already known functions, it is also necessary to consider the institution's potential to pressure existing administrative and legal structures, which can lead to changes and improvements to this important instrument for environmental prevention and mitigation.

## NOTES

1 | Law No. 7,347/85, which deals with the protection of diffuse interests and regulates the hypotheses of filing a public civil action, gave the State and Federal Public Prosecutor's Offices and society the legitimacy to apply it against those responsible for damages caused to the environment (HOFFMANN, 2015).

2 | The legislation allows joint action between the federal and state Public Prosecutor's Offices to defend diffuse and environmental interests (MPU, 2022).

3 | The Mexilhão Field, located on the continental shelf of the State of São Paulo, in the Santos basin, is approximately 138 km from the coast.

4 | [https://servicos.ibama.gov.br/licenciamento/consulta\\_empresendimentos.php](https://servicos.ibama.gov.br/licenciamento/consulta_empresendimentos.php).

5 | Civil Inquiry No. 23/05 filed on August 19, 2005, entitled: Full Protection Conservation Unit – Specially protected spaces – Works necessary for the exploration and transport of natural gas – Deterioration of the Environment - Lack of infrastructure in North Coast cities.

6 | It provides the procedures and criteria used in environmental licensing and for exercising competence and activities and enterprises subject to environmental licensing.

7 | The Civil Inquiry is regulated by Federal Law No. 7347/85.

8 | The Mexilhão fixed platform, is the largest offshore structure ever built in Brazil, with a height of 227 meters, equivalent to a 75-story building. After 2011, the Mexilhão platform received gas from the Lula field, located in the Santos Basin pre-salt area, through the Lula-Mexilhão submarine gas pipeline. This gas pipeline is 216 kilometres long and has the greatest depth and length of a rigid submarine pipeline ever installed in Brazil. Lula-Mexilhão is considered strategic for developing pre-salt production in the Santos Basin and increasing flexibility in the supply of specified gas to the domestic market.

9 | Available at: <https://comunicabaciadesantos.petrobras.com.br/empreendimento/mexilh%C3%A3o>. Accessed in: February 2022.

10 | The PAC was launched in 2007 during the Lula administration (2003-2010) and continued during the first Dilma Rousseff administration (2010-2014). Within the scope of this program, about R\$ 1.9 trillion (about US\$ 300 billion) were used in 2007–2016 in logistics, energy, social and urban infrastructure works in the country (BRAZIL, 2016).

11 | Plangas was instituted in 2006 to increase the gas production and processing capacity, which in that period was 15.8 million m<sup>3</sup>/day, and whose goal was to reach 40 million m<sup>3</sup>/day in 2008 and 55 million m<sup>3</sup>/day in 2010. This program was strengthened and consolidated after the supply crisis with Bolivia, resulting from the nationalization of reserves explored by Petrobras in that country in 2005 (COSTA et al. 2008).

12 | Fragmenting the licensing of large projects into small sections, groups or units, under the argument of procedural facilitation, has been a constant practice in Brazil (HOFFMAN, 2015).

13 | Ibama Process No. 02022.003014/2005-75

14 | Ibama Process No. 02001.005437/2005-78

15 | Ibama Process No. 02001.005436/2005-23

16 | BRAZIL. Law decree No. 3,365, of June 21, 1941: Provides for Expropriation for Public Utility. Available at: [http://www.planalto.gov.br/ccivil\\_03/decreto-lei/De13365.htm](http://www.planalto.gov.br/ccivil_03/decreto-lei/De13365.htm). Accessed in: Jan 2016

17 | Regulated by State Decree No. 49,215/2004

18 | Subsequently, in 2013, the environmental licensing of the Caraguatatuba-Vale do Paraíba oil pipelines (OCVAP I and II) began to be monitored within the scope of this Civil Inquiry. With a length of approximately 68 km, the pipelines will transport liquefied petroleum gas (LPG) and G5+ condensate, produced between the Monteiro Lobato gas treatment facility (UTGCA) and the Henrique Lage refinery (Revap).

19 | MPSP/CAEx RI Technical Opinion No. 3,368, March 8, 2012

20 | The main objective of the cumulative effect assessment is to address global impacts to avoid the so-called tyranny of small decisions, a term coined by economist Alfred E. Kahn to describe economic phenomena. This presents some decisions, individually small in scope and temporal perspective that cumulatively result in an undesirable situation. Later, ecologist William Odum adapted the premise to environmental degradation (DEAT, 2004).

21 | MPSP Technical Report of October 3, 2007

22 | Port and road projects.

23 | Report of the working Group on Environmental Damage Assessment, coordinated by the MPSP, Involving Prosecutors, Experts, and Scientists (2011).

24 | Unfortunately, this research could not interview the public prosecutors and attorneys involved. Nevertheless, the presence of these sources could contribute to broadening the understanding of the relationship between these players and the expert body.

25 | CAEX RI Technical Opinion No. 3,368, march 2012

26 | Understood as a process of building definitions for the situations experienced by social players, giving meaning to such events and organizing the experience.

## REFERENCES

ALMEIDA, G. M. **Poderes investigatórios do Ministério Público nas ações coletivas**, São Paulo, Atlas, 2010.

ALONSO, A.; COSTA, V.; MACIEL, D. Identidade e estratégia na formação do movimento ambientalista brasileiro. **Novos Estudos Cebrap**. 2007, v. 79, p. 151-167.

ALONSO, A.; COSTA, S.; TOMIOKA, S. **Modernização negociada: expansão viária e riscos ambientais no Brasil**. Brasília, Ibama, 2001.

ASSOCIAÇÃO BRASILEIRA DE ENTIDADES ESTADUAIS DE MEIO AMBIENTE. **Novas propostas para o licenciamento ambiental do Brasil**. ABEMA, Brasília: 2013. Available at: <http://pnla.mma.gov.br/publicacoes-diversas?download=73:novas-propostas-para-o-licenciamento-ambiental-no-brasil&start=60#:~:text=Proposta%3A%20Mudar%20o%20formato%20das,com%20o%20m%C3%A1ximo%20de%20transpar%C3%Aancia>. Access in: 05 jan. 2022.

BÄCKSTRAND, K. Civic science for sustainability: reframing the role of experts, policy-makers and citizens in environmental governance. **Global Environmental Politics**, v. 3, n. 4, p. 24-41, 2003.

BAILEY, K. **Methods of social research**. Simon and Schuster, 2008.

BENFORD, R. D.; SNOW, D. A. Framing Processes and Social Movements: an overview and assessment. **Annual Review of Sociology**, v. 26, p. 611-639, 2000.

BERMANN, C. A resistência às obras hidrelétricas na Amazônia e a fragilização do Ministério Público Federal. **Novos Cadernos Naea**, v. 16, n. 2, 2013.

BERNARD, H. R. **Social research methods: qualitative and quantitative approaches**. Sage, 2013.

BOSWELL, C. **The political uses of expert knowledge**. Cambridge (MA), Cambridge University Press. 2009.

BRASIL. Ministério do Planejamento, Orçamento e Gestão. **11o Balanço do PAC 2**. 2011 a 2014. [S.l.: S.n.], 2016. Available at: <http://www.pac.gov.br/pub/up/pac/11/PAC11.pdf>. Access in: 20 maio 2021. Brasília, Ibama, 2001

CAMACHO, W. A. B.; PETERLINI, M. A. D.; FERNANDEZ, R. K. dos S. M. Ministério Público e a judicialização da política: uma análise a partir da implantação da Usina Hidrelétrica de Belo Monte no Pará. **Revista de Direito**, v. 10, n. 2, p. 373-404, 2018.

CHACHÉ, C. B. O licenciamento ambiental "fragmentado": estudo de caso do Comperj. **Revista Ensaios**, v. 7, p. 170-187, 2014.

COOPER, L. M.; SHEATE, W. R. Integrating cumulative effects assessment into UK strategic planning: implications of the European Union SEA Directive. *Impact Assessment and Project Appraisal*, v. 22, n. 1, p. 5-16, 2004.

COSTA, R. *et al.* **Natural gas in Brazil and the role of BNDES (Banco Nacional de Desenvolvimento Economico e Social) to finance the sector.** 2008.

CRAWFORD, C. A Response to Professor McAllister's Reply to My Review of Making Law Matter. *George Washington International Law Review*, v. 40, p. 687, 2009b.

CRAWFORD, C. Defending Public Prosecutors and Defining Brazil's Environmental "Public Interest": a review of Lesley McAllister's Making Law Matter. *Environmental Protection and Legal Institutions in Brazil. George Washington International Law Review*, v. 40, p. 619, 2009a.

CUNHA, S. B.; GUERRA, A. J. T. **Avaliação e perícia ambiental.** Rio de Janeiro: Bertrand Brasil, 2008.

DEAT. **Cumulative Effects Assessment.** Integrated Environmental Management. Information, Series 7. Pretoria: Department of Environmental Affairs and Tourism, 2004.

DUARTE, C. G.; DIBO, A. P. A.; SÁNCHEZ, L. E. O que diz a pesquisa acadêmica sobre avaliação de impacto e licenciamento ambiental no Brasil. *Ambiente & Sociedade*, v. 20, n. 1, p. 245-278, 2017.

FARIA, I. D. **Compensação Ambiental:** os fundamentos e as normas, a gestão e os conflitos. Senado Federal, Consultoria Legislativa, Centro de Altos Estudos, 2008. Available at: <https://www12.senado.leg.br/publicacoes/estudos-legislativos/tipos-de-estudos/textos-para-discussao/td-43-compensacao-ambiental-os-fundamentos-e-as-normas-a-gestao-e-os-conflitos>. Access in: 5 jan. 2022.

FERNANDES, A. H. V. *et al.* Alternativas locais em Avaliação de Impacto Ambiental de rodovias mineiras. *Desenvolvimento e Meio Ambiente*, v. 43, 2017.

FERREIRA, L. da C. Os Ambientalistas, os Direitos Sociais e o Universo da Cidadania. *In:* FERREIRA, L. da C.; VIOLA, E. (Org.). **Incertezas de Sustentabilidade na Globalização:** Editora da Unicamp, p. 241-277, 1996.

FREITAS, V. P. **Técnico e o juiz:** perícia como requisito para execução da Justiça ambiental. Available at: <http://conjur.estadao.com.br/static/text/49118,1>. Access in: 20 ago. 2019.

FUNDAÇÃO SOS MATA ATLÂNTICA; INPE. **Atlas dos Remanescentes Florestais da Mata Atlântica 2013-2014.** 2015. Available at: [http://mapas.sosma.org.br/site\\_media/download/atlas\\_2013\\_2014\\_relatorio\\_tecnico\\_2015.pdf](http://mapas.sosma.org.br/site_media/download/atlas_2013_2014_relatorio_tecnico_2015.pdf). Access in: Jan. 2019.

FURUITI, N. S. **A atuação do Ministério Público no licenciamento ambiental de empreendimentos de geração de energia.** Dissertação de Mestrado. Programa de Pós-Graduação em Ciência Ambiental. Universidade de São Paulo, 2009.

GALINDO-LEAL, C.; CÂMARA, I. de G. Atlantic Forest hotspot status: an overview. *In:* GALINDO-LEAL, C.; CÂMARA, I. G. (Ed.). **The Atlantic Forest of South America:** biodiversity status, trends, and outlook. Washington: Center for Applied Biodiversity Science and Island Press, 2003.

HANNIGAN, J. **Environmental sociology.** Routledge. 2. ed. 2006.

HOCHSTETLER, K.; KECK, M. E. **Greening Brazil:** environmental activism in state and society. Durham: Duke University Press. 2007.

HOFFMANN, R. M. **Gargalos do licenciamento ambiental federal no Brasil**. Brasília: Câmara dos Deputados, jul. 2015. Available at: <https://bd.camara.leg.br/bd/handle/bdcamara/24039>. Access in: 14 jul. 2020.

JASANOFF, S. Technologies of humility: citizen participation in governing science. **Minerva**, v. 41, n. 3, p. 223-244, 2003.

JERÓNIMO, H. A peritagem científica perante o risco e as incertezas. **Análise Social: Revista de Ciências Sociais da Universidade de Lisboa**, v. XLI (4.º), n. 181, p. 1143-1165, 2006.

MALVESTIO, A. C. **Análise da efetividade da Avaliação Ambiental Estratégica como instrumento de Política Ambiental no Brasil**. Tese (Doutorado) – Escola de Engenharia de São Carlos. Universidade de São Paulo, 2013. Available at: <https://www.teses.usp.br/teses/disponiveis/18/18139/tde-10092013-101337/en.php>. Access in: 5 jan. 2022.

MCALLISTER, L. K. **Making Law Matter**: environmental protection and legal institutions in Brazil. Stanford, CA: Stanford University Press, 2008.

MCALLISTER, L. K. On Environmental Enforcement and Compliance: a reply to Professor Crawford's Review of Making Law Matter. **Environmental Protection and Legal Institutions in Brazil. George Washington International Law Review**, v. 40, p. 649, 2009.

MINISTÉRIO PÚBLICO DA UNIÃO. Ministério Público Federal (MPF) x Ministério Público Estadual (MPE). Available at: <http://www.mpu.mp.br/navegacao/institucional/duvidas>. Access in: fev. 2022.

MINISTÉRIO PÚBLICO FEDERAL. **Inquéritos civis**. Available at: <http://www.transparencia.mpf.mp.br/conteudo/atividade-fim/inqueritos>. Access in: abr. 2021.

MYERS, N. *et al.* Biodiversity hotspots for conservation priorities. **Nature**, v. 403, p. 853-858, 2000.

O ESTADO DE S. PAULO. Petrobras começa a operar dia 13 o maior campo de gás do Brasil. O Estado de S. Paulo, Economia & Negócios, 2 mar., 2011. Available at: [economia.estadao.com.br/noticias/negocios,petrobras-comeca-a-operar-dia-13-o-maior-campo-de-gas-do-brasil,57326e](http://economia.estadao.com.br/noticias/negocios,petrobras-comeca-a-operar-dia-13-o-maior-campo-de-gas-do-brasil,57326e). Access in: 10 abr. 2014.

PELLIN, A. *et al.* Avaliação Ambiental Estratégica no Brasil: considerações a respeito do papel das agências multilaterais de desenvolvimento. **Engenharia Sanitária e Ambiental**, v. 16, n. 1, p. 27-36, 2011.

RIBEIRO, M. C. *et al.* The Brazilian Atlantic Forest: how much is left, and how is the remaining forest distributed? Implications for conservation. **Biological Conservation**, v. 142, p. 1141-1153, 2009.

ROQUEPLO, P. **Entre savoir et décision, l'expertise scientifique**, Paris, INRA Editions. 1997.

SÁNCHEZ, L. E. Development of Environmental Impact Assessment in Brazil. **UVP Report**, v. 27, p. 193-200, 2013.

SÁNCHEZ, L. E. Por que não avança a avaliação ambiental estratégica no Brasil? **Estudos Avançados**, v. 31, n. 89, p. 167-183, 2017.

SÃO PAULO (Estado). Secretaria do Meio Ambiente. Coordenadoria de Planejamento Ambiental (CPLA). **Avaliação ambiental estratégica: dimensão portuária, industrial, naval e offshore no litoral paulista**. São Paulo, v. 3, 2010.

SAREWITZ, D. How science makes environmental controversies worse. **Environmental Science & Policy**, v. 7, n. 5, p. 385-403, 2004.

- SOUZA, L. M. O. **Ministério Público e a defesa da Constituição e da democracia**. *Lumen Juris*, 1 jan. 2013.
- TEPEDINO, G. J. M. A questão ambiental, o Ministério Público e as ações civis públicas. **Revista Argumentum – Argumentum Journal of Law**, v. 2, p. 35-58, 2017.
- VALERA, C. A. A avaliação ambiental integrada dos impactos cumulativos e sinérgicos dos empreendimentos minerários. **MPMG Jurídico**, 2012. Available at: <http://www.gnmp.com.br/publicacao/147/a-avaliacao-ambiental-integrada-dos-impactos-cumulativos-sinergicos-dos-empreendimentos-minerarios>. Access in: 5 jan. 2022.
- VAN DER MOLEN, F. How knowledge enables governance: the coproduction of environmental governance capacity. **Environmental Science & Policy**, v. 87, p.18-25, 2018.
- VIEIRA, D. M.; CORREA, P. M.; CARMO, R. A. Os desafios para a expansão da oferta de energia elétrica. **Revista do TCU**, Maio-Agosto, 2012. Available at: <https://revista.tcu.gov.br/ojs/index.php/RTCU/issue/view/6>. Access in: jan. 2022.
- VIGLIO, J. E.; MONTEIRO, M. S.; FERREIRA, L. da C. Ciência e processo decisório: a influência dos experts no licenciamento ambiental de um empreendimento petrolífero no litoral paulista. **Revista Brasileira de Ciências Sociais**, v. 33, n. 98, 2018.
- VIGLIO, J. E. *et al.* Narrativas científicas sobre petróleo e mudanças do clima e suas reverberações na política climática brasileira. **Sociologias**, v. 21, n. 51, 2019.
- VILAÇA, L. De práticas a capacidades: a atuação de procuradores do Ministério Público Federal no caso de Belo Monte. **Sociedade e Cultura**, v. 20, n. 1, 2017.
- ZHOURI, A.; OLIVEIRA, R. Development and environmental conflicts in Brazil: challenges for anthropology and anthropologists. **Vibrant: Virtual Brazilian Anthropology**, v. 9, n. 1, p. 181–208, 2012.