



Redes. Revista do Desenvolvimento Regional

ISSN: 1414-7106

ISSN: 1982-6745

revistaredes@unisc.br

Universidade de Santa Cruz do Sul

Brasil

Hebling Meira, Ana Cláudia; Almeida, Jalcione

Development and environmental conflict: a construction of the “empty spaces”
discourse in megaprojects on the southern coast of Espírito Santo, Brazil

Redes. Revista do Desenvolvimento Regional, vol. 26, 2021, January-December

Universidade de Santa Cruz do Sul

Santa Cruz do Sul, Brasil

DOI: <https://doi.org/10.17058/redes.v26i0.14747>

Available in: <https://www.redalyc.org/articulo.oa?id=552070455017>

- How to cite
- Complete issue
- More information about this article
- Journal's webpage in redalyc.org

redalyc.org

Scientific Information System Redalyc

Network of Scientific Journals from Latin America and the Caribbean, Spain and
Portugal

Project academic non-profit, developed under the open access initiative



Development and environmental conflict: the formation of the discourse of “empty spaces” in megaprojects on the south coast of Espírito Santo, Brazil

Ana Cláudia Hebling Meira

Universidade Federal do Espírito Santo – Alegre – ES – Brasil

ORCID: <https://orcid.org/0000-0001-8848-6903>

Jalcione Almeida

Universidade Federal do Rio Grande do Sul – Porto Alegre – RS – Brasil

ORCID: <https://orcid.org/0000-0002-8915-0579>

Abstract

During the last decades in Brazil, the developmentalist discourse has promoted several actions that attracted investments for large construction projects. The south coast of the state of Espírito Santo, chosen as the adequate site for investments in transport and logistics infrastructure to support exports and modernize the oil and gas production chain, has been, since the early 2000s, a setting of transformations prompted by the announcement of future installation of ports, thermoelectric plants, construction of roads and railways, among other infrastructures. Such a process does not happen without conflicts. In a recent research focused on environmental conflicts originated from the clash of interests between port investments and fishing communities in the south of the state, it was found that a strategy used by agents to enable “development” was the formation of a discourse that highlights the “empty spaces”. This is a qualitative research based on ethnographic immersion, observations, document analysis and interviews with fishermen, government officials and representatives of the enterprises. This article aims to demonstrate the elements used to form this discourse and its opposite, which includes the spaces’ plenty diversity, expressed by the presence of traditional artisanal fishing communities. Findings show that the development actions, intending to be homogenizing, do not allow the existence of differences in space, what sparks the disputes that occur on the south coast of Espírito Santo, especially concerning the maintenance of the way of life for artisanal fishermen.

Keywords: Development. Environmental conflicts. Empty spaces. Spatialities.

Desenvolvimento e conflito ambiental: a construção do discurso dos “espaços vazios” em megaprojetos no litoral sul do Espírito Santo, Brasil

Resumo

Nas últimas décadas, o discurso desenvolvimentista no Brasil promoveu diversas ações que culminaram na atração de investimentos em grandes empreendimentos. Eleito o espaço adequado para investimentos em infraestrutura logística para apoio a exportações e à

modernização da cadeia de produção de petróleo e gás, o litoral sul do estado do Espírito Santo é, a partir do início dos anos 2000, palco de transformações que ocorrem com o anúncio da instalação de portos, usinas termoeletricas, construção de estradas e ferrovias, entre outros. Este processo não se viabiliza sem a ocorrência de conflitos. Em pesquisa recente, cujo objetivo foi o de focar os conflitos ambientais originados no choque de interesses entre os investimentos portuários e as comunidades pesqueiras no sul do estado, constatou-se que um dos mecanismos utilizados pelo “desenvolvimento” para se viabilizar foi a construção de um discurso que ressalta os “espaços vazios”. Trata-se de pesquisa qualitativa que adotou como procedimentos metodológicos a inserção etnográfica, observações, análise de documentos e entrevistas com pescadores, representantes do poder público e dos empreendimentos. Este artigo pretende demonstrar os elementos utilizados para a afirmação deste discurso e a sua negação, que contempla as espacialidades repletas de diversidade e diferenças, expressas pela presença de comunidades tradicionais de pesca artesanal. Conclui-se que as ações do desenvolvimento, na medida em que se pretendem homogeneizadoras, não permitem a existência de diferenças do espaço, o que provoca as disputas que ocorrem no litoral sul do Espírito Santo, com destaque àquelas que dizem respeito à manutenção do modo de vida dos pescadores artesanais.

Palavras-chave: Desenvolvimento. Conflitos ambientais. Espaços vazios. Espacialidades.

Desarrollo y conflicto ambiental: una construcción del discurso de “espacios vacíos” en megaproyectos en la costa sur de Espírito Santo, Brasil

Resumen

En las últimas décadas, el discurso del desarrollo en Brasil ha promovido varias acciones que culminaron en atraer inversiones en grandes empresas. Elegido como espacio adecuado para las inversiones en infraestructura logística para apoyar las exportaciones y modernizar la cadena de producción de petróleo y gas, la costa sur del estado de Espírito Santo ha sido, desde principios de la década de 2000, la etapa de las transformaciones que se han producido con el anuncio de la instalación de puertos, plantas termoeletricas, construcción de carreteras y ferrocarriles, entre otros. Este proceso no es posible sin conflictos. En una investigación reciente, cuyo objetivo era enfocarse en los conflictos ambientales originados en el choque de intereses entre las inversiones portuarias y las comunidades pesqueras en el sur del estado, se encontró que uno de los mecanismos utilizados por el "desarrollo" para hacer viable era la construcción de un discurso que enfatiza los "espacios vacíos". Se trata de una investigación cualitativa que se adoptó como procedimientos metodológicos de inserción la etnográfica, observaciones, análisis de documentos y entrevistas con pescadores, representantes de las autoridades públicas y empresas. Este artículo pretende demostrar los elementos utilizados para afirmar este discurso y su negación, que contempla las espacialidades llenas de diversidad y diferencias, expresadas por la presencia de comunidades tradicionales de pescadores artesanales. Se concluye que las acciones de desarrollo, en la medida en que pretenden homogeneizar, no permiten la existencia de diferencias en el espacio, lo que provoca las disputas que se producen en la costa sur de Espírito Santo, con énfasis en aquellas que conciernen al mantenimiento del camino de la vida de los pescadores artesanales.

Palabras clave: Desarrollo. Conflictos ambientales. Espacios vacíos. Espacialidades.

1 Introduction

Since the beginning of the 2000s, the government of the state of Espírito Santo (ES) has adopted a new-developmental discourse and has taken actions to promote development aimed at industrialization and expansion of infrastructure for both exports and the production of oil and gas. Several large projects have been attracted across the state by means of “tax incentives for projects aimed at implementation, expansion or diversification of production capacity”, “projects for revitalization of halted establishments” to encourage the “production sectors committed to increase the competitiveness of companies established in the state” (Espírito Santo, 2016).

The “private sector” has also participated in the promotion of development: the actions that stand out the most in this regard are those undertaken by the Espírito Santo in Action Movement, created in 2003, which brings together entrepreneurs from various sectors of the economy and has as one of its main objectives to invigorate the state economy by strengthening local productive arrangements to “make companies even more engaged and participatory in their economic and social role” (Espírito Santo em Ação, 2016).

Such development proposals bring with them the pretext of improving living conditions of the population of the state. These promises, however, seem not to captivate the most disadvantaged population groups. Based on recent research work involving artisanal fishing communities in the municipalities of Presidente Kennedy, Marataízes and Itapemirim, on the south coast of Espírito Santo, and their criticisms towards port projects (Porto Central, Itaoca Terminal Marítimo and Terminal Marítimo of C-Port Logística), this work aims to demonstrate how the development discourse, in order to enable its projects, creates the notion of “empty spaces”, thus hiding the various spatialities existing in those spaces, disregarding local traditional communities and exposing them to situations of loss of work, income and housing.

It is important to note that this research was based on a qualitative method comprising ethnographic fieldwork among the fishing communities for 12 months, using a fieldwork diary to record the participant observations. In addition, interviews were conducted with representatives of the municipal government (mayors and municipal secretaries), representatives of the enterprises and artisanal fishermen, totaling 12 semi-structured interviews and approximately ten hours recordings that were transcribed, systematized and analyzed according to the technique of discourse analysis. Official documents, press news and information available on the companies’ websites were also analyzed.

This article is organized into five sections including this introduction. The following section presents the theoretical-methodological approaches that support the analysis of the “empty space” discourse. In the third section we seek to demonstrate how development (and its agents) constructs the discourse of an “empty” south coast, an entity prone to be developed (*entidad desarrollable*) (Escobar, 2013), ideal for receiving large investments. The fourth section highlights the diversity of forms of existence of both human and non-human agents present in that space – which gives rise to criticisms towards the development of the southern coast that spark environmental conflict –, trying to demonstrate that this is not an

empty space, just the opposite, it is diverse. Finally, we present some final considerations.

2 The “empty space” discourse: theoretical approaches

The homogenizing pretension of the development discourse associated with the transformation of the other into its opposite¹ – the underdevelopment – also brings with it the possibility of transforming this other into an “empty space”. According to this discourse, the “developed” is that whose space is characterized by urbanized, industrialized societies with the presence of salaried workers, adequate economic performance and completely integrated into the logic of the market economy. From this perspective, spaces that lack these characteristics are characterized as “empty” or, according to Escobar (2013), as an *entidad desarrollable* or a space where the “developed” must help the “underdeveloped” to develop (Rist, 2008).

Two ruptures, typical of the modern project, are present in this conception of development: the *space/time separation* and the *society/nature separation*. The development discourse is based on the perspective that time is flexible and allows for changes, always towards more and better, progress, growth and happiness. In this context, progress assumes, above all, a partial and practical sense: it is an “improvement” (Almeida, 2009). It is assumed that, if “underdeveloped” spaces still exist, it is just a matter of time: development shall arrive. This implies a linear view of time and social processes. There is no room for differences and even less for social heterogeneities. On the other hand, development is based on the conception of space as a fixed, territorial base on which it will be processed to reach a given view of the future, as a kind of teleology of progress (Massey; Keynes, 2004). Development must, therefore, reach every space and those where it has not yet arrived can be considered “empty spaces”.

This concept of “empty spaces” appears in the context of the First World War along with the notion of “living space” (*Lebensraum*), defined as a set of spatial and natural conditions necessary for the maintenance or consolidation of the State’s power over its territory. It was proposed by the German geographer Friedrich Ratzel, for whom “empty or underutilized areas of the planet should, for the benefit of humanity, be occupied by nations that had historically demonstrated efficiency in the management of territories, to obtain production of wealth from them” (Maciel, 2007, p. 1). According to Ratzel (1898-1899), “living space” is that necessary for the territorial expansion of a people; every society at a certain degree of development should conquer territories where people are “less developed”. According to the author, these territories would be, from the perspective of expansion of Western capitalist economies, underutilized or “empty” areas.

In the field of geography, another notion that underlies the idea of “empty spaces” is that of “demographic void”, or “human voids”. The “empty” space is either an unpopulated place or one with low population density: “an area is considered ‘populated’ when there is a rudiment of an economic organization and, despite precarious communications, a regime of exchanges with the rearguard, that

¹ As suggested by Rist (2008) and Esteva (2000).

is, the most civilized centers” (Bernardes, 1952, p. 55). Such a notion completely disregards both the presence of “traditional populations” as indigenous peoples, *quilombolas*, riverside dwellers, among others, and the practice of productive activities not included in the market economy.

Based on the idea of technical-scientific progress, the development discourse also brings with it the split between society and nature. Since the 14th and 15th centuries, with the consolidation of the notion of scientific rationality, humans are considered “subjects” that must explain/interpret nature, now transformed into an “object”. This split is fundamental for the emergence of the modern project, consolidated from the 17th century onwards by the Cartesian philosophy, for which human being’s faculty of thinking and using reason gives her singularity and supremacy over everything else (Raynaut, 2006). Thus, the development discourse, insofar as it intends to subjugate all spheres of social life to the economic sphere by means of scientific knowledge and the application of modern production techniques, considers the spaces where such techniques have not yet transformed the “natural” nature – or those where traditional productive processes still predominate (such as plant or animal extraction, agriculture or livestock) – “empty” spaces that development must reach.

3 The “empty space” discourse on the south coast of Espírito Santo

The southern coast of Espírito Santo has been constructed by the discourse of development as one of those spaces “empty of civilization”, empty of modernity, science, society, market economy and modern technologies, in short, of progress. This process is not recent: from the colonial period until the mid-19th century, the state was predominantly inhabited by indigenous people, representatives of the Puri, Coroado, Botocudo, Tupiniquim and Temiminó tribes. In the first quarter of the 19th century, 25% of Espírito Santo’s population was composed of Tupiniquim and Temiminó:

But, whether towards North, mainly inhabited by the Botocudo, or towards South, where the Puri, the Coroado and increasingly Botocudo people displaced from other lands were located, the independent indigenous people in Espírito Santo were interpreted, then and in the beginning of the 19th century, as numerous, since they “infested” the lands, provoked “rushes” and threatened the local society. (Moreira, 2000, p. 139-140)

The large presence of indigenous peoples in the region was seen by the captaincy’s administrators as a major inconvenience. This defined the situation of Espírito Santo as precarious, as the indigenous people were seen as “uncivilized enemies” that prevented the entry of colonizers into the hinterland (Moreira, 2000).

In their contact with the European population many indigenous people were killed in wars or by diseases brought from Europe. This contributed to the belief that the American population had disappeared from Brazil in the second half of the 19th century. Moreira (2000), however, draws attention to the fact that this belief is related to the dynamics of the European colonialist ideology that minimized or even disregarded the presence of indigenous peoples in the territories of its colonial

borders. This contributed to the reproduction and updating by local elites of the ideology of existing wild, “empty” lands available for colonization, economic development and modernization. This belief contributed to attracting foreigners, especially Germans and Italians, to the formation of colonial nuclei in the late nineteenth century.

The concept of “demographic void” was also present in the political vocabulary between the 1940s and 1970s, represented, fundamentally, by regional integration policies.

Demographic void, therefore, is a cliché produced by the State and by part of Brazilian society, with deep roots in the national history of the 20th century. Most of the time, it indicates, if not the complete absence of human traits in a given territory, at least the existence of a extremely low demographic density (Moreira, 2000, p. 144).

The southern coast of Espírito Santo, historically produced by the hegemonic discourse of “demographic void”, remains scarcely occupied today. This region is predominantly inhabited by family farmers and artisanal fishermen, descendants of indigenous people or remnants of *quilombos*, what, according to the development discourse, makes this region an *entidad desarrollable*.

Table 1 – Demographic density in Brazil, Espírito Santo and municipalities of the south coast – 2000 and 2010.

Municipalities	Density (inhabitant/Km ²)	
	2000	2010
Alfredo Chaves	22,11	22,66
Anchieta	46,55	58,41
Iconha	56,40	61,53
Itapemirim	50,04	55,15
Marataízes	229,96	256,55
Piúma	205,80	242,15
Presidente Kennedy	16,36	17,66
Rio Novo do Sul	57,59	55,42
Espírito Santo	67,20	76,25
Brazil	19,93	24,00

Source: IBGE (Censuses of 2000 and 2010).

Table 1 shows the low demographic density of the southern coastal region in 2000 and a small growth in 2010, which may reflect the arrival of some development projects that are already operative or under installation. Among the municipalities that comprise the scope of this article, President Kennedy is noteworthy, as in 2000 it had only 16.36 inhabitants/km².

The notion of “demographic void” equates the “savages”, or natives, with the other elements of nature and, by reaffirming the ideology of progress based on society-nature separation, it also views productive activities strongly related to natural processes, such as extractive practices, fishing and small family farming, as “savage”. Thus, the territorial occupation based on economic activities are not fully

integrated into the market economy, or that do not symbolize capitalist modernity, also contributed to the construction of the idea of an “empty space”.

Therefore, the southern coast of Espírito Santo, seen as an “empty space” lacking development, becomes the perfect scenario for the implementation of mega development projects. Among these, it is worth noting the construction of the Offshore Logistics Support Base by C-Port Brasil Logística Offshore Ltda., in Itaipava, district of the municipality of Itapemirim (Praia da Gamboa); of the Itaoca Terminal Marítimo S.A., by Itaoca Offshore, in Itaoca, district of Itapemirim (Praia de Itaoca); and of Porto Central, by TPK Logística S.A., Port of Rotterdam and Polimix, in the municipality of Presidente Kennedy (Praia das Neves/Marobá).

The logistical support base of C-Port Brasil Logística Offshore Ltda. aims to “meet the growing market demand”; contribute to “enhance logistical efficiency in the state of Espírito Santo”, by decentralizing logistics and port services in the state; and be an “instrument to leverage exploratory oil platforms in the Campos and Espírito Santo basins”. Located on Gamboa beach, in the district of Itaipava, municipality of Itapemirim, this logistical support base will occupy an approximate area of 143 ha (including 118 ha offshore and 25 ha onshore) and will have storage areas, covered and uncovered berths, berths for ship inspections and repairs, operational support facilities, power substation, waste management area, lodging, storage sheds, storage and mixing tanks and support facilities. In its implementation stage, it promises to offer 1,600 direct jobs, and in its operation stage, 460 direct jobs (C-Port Logística Offshore Brasil Ltda., 2012).

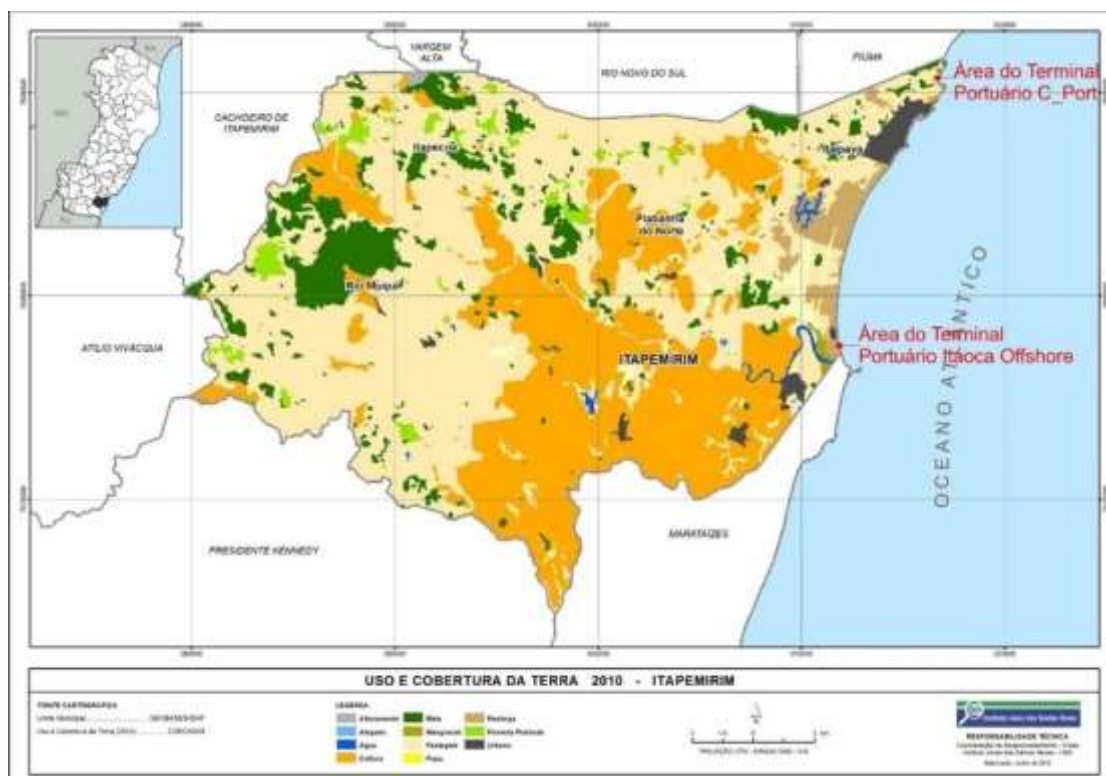
The Itaoca Terminal Marítimo S.A. aims to “meet the growing demand for logistical support for offshore activities”; “actively participate in programs that promote the development of local communities, the municipality and the state”; “be a reference in providing logistical support for offshore activities as a company rooted in Espírito Santo”; “generate returns to shareholders, partners, customers and employees”; and “expand the training of local labor”. Located at Praia de Itaoca, in the district of the same name, municipality of Itapemirim, this project will have the following structures/services: mooring berths, cargo handling, availability of administrative areas, supply of drilling fluids, heliport, storage of cargo and materials, collection and disposal of waste, water supply and fuel supply. In its implementation stage, it promises to offer 650 direct jobs and, at the peak of its operative stage (about four years after the start of its activities), about 900 direct jobs (Itaoca Offshore, 2013).

Porto Central, the largest of the three enterprises, is a “multipurpose private industrial port complex” developed in the form of a landlord port. Based on the concept of *cluster*, which “strategically groups terminals with similar activities to enable synergies and optimize operational efficiency”, the project has seven main sectors: oil and gas (including liquified natural gas - LNG), minerals (such as iron ore), agricultural products (such as soy, corn and fertilizers), general cargo (steel products, marble and granite, cars and equipment), containers, offshore industries (support base and shipyards) and energy generation. Located in the municipality of Presidente Kennedy, between the beaches of Marobá and das Neves, Porto Central will occupy an area of 2,000 ha and, as it is a deep-water port, it will open a ship channel 25 meters deep to allow large draft ships to dock (TPK Logística SA, 2013).

These three enterprises are located on the coastal strip, from Praia da Gamboa to Praia das Neves, which has about 70km, almost half of which are not suitable for bathing due to its relief, which hampered the development of tourism, thus making room for the idea that “there is nothing there” and, therefore, the presence of the projects would not disturb anyone, on the contrary, it would lead to development in a still inhospitable region.

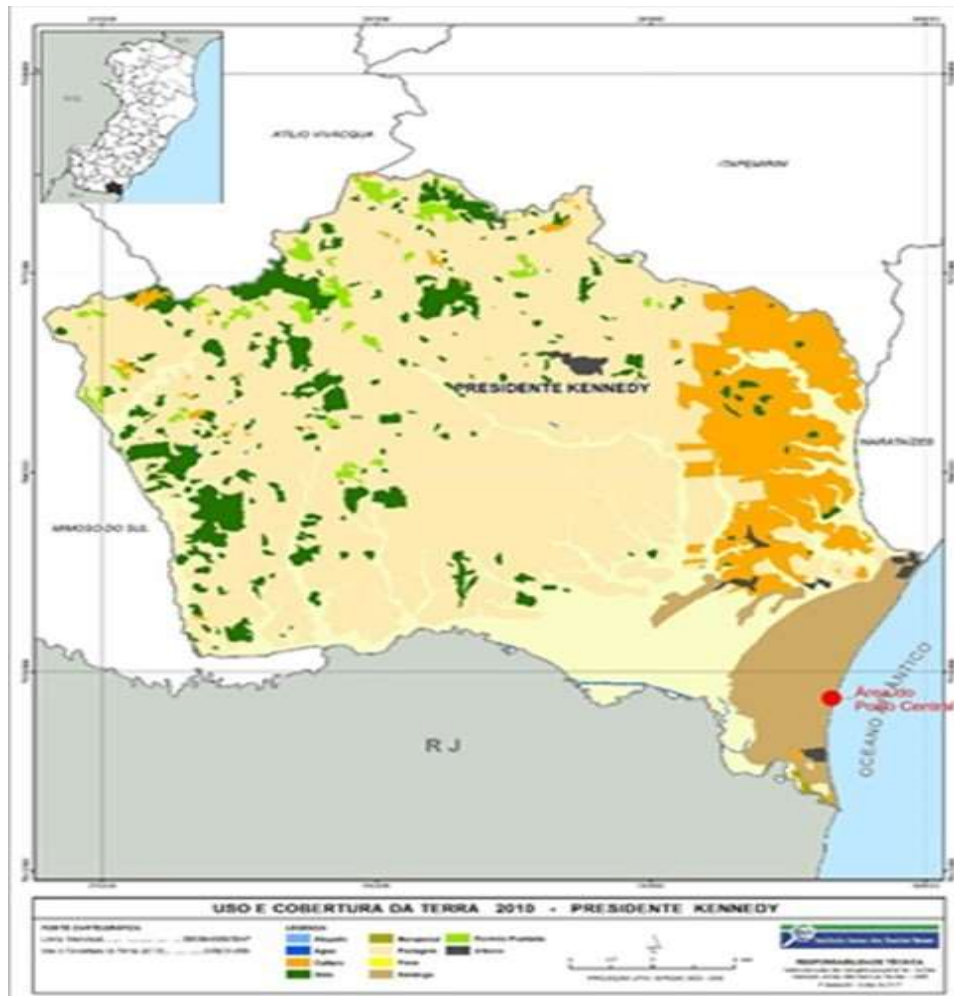
Figures 1 and 2 show that the areas chosen for the installation of Itaoca Terminal Marítimo S.A. and Porto Central are areas occupied by pastures and preserved sandbanks. One could say, “spaces empty of modernity”, or, in the specific case of preserved *restinga* areas, spaces in which nature has not yet been subjected to modern economic exploitation. The territory of Itapemirim (Figure 1) is predominantly occupied by sugarcane cultivation, followed by pasture areas. In the municipality of Presidente Kennedy, pastures predominate. The large beach area (or wetlands, where fishing activity also takes place) and the presence of still preserved *restinga* all along its coastline are noteworthy (Figure 2).

Figure 1 – Land use and occupation map of the municipality of Itapemirim-ES



Source: Instituto Jones dos Santos Neves, 2016.

Figure 2 – Land use and occupation map of the city of Presidente Kennedy-ES



Source: Instituto Jones dos Santos Neves, 2016.

The analysis of Environmental Impact Reports (EIR) of projects in this region reveals the following arguments for the choice of locations. The report of Itaoca Terminal Marítimo states that the “region located in Itapemirim, with great availability of coastal areas [is] *unoccupied* and [has] easy access to the beach” (ITAOCA OFFSHORE, 2013, p.10 – emphasis added). One of the arguments for choosing the location for the construction of Porto Central is the “fact of having *free areas* for the implementation of the project. In addition, the *population density is low* in the surroundings of the project” (TPK Logística S.A., 2013, p. 33 - emphasis added).

Although the enterprises recognize the importance of fishing activity for local communities, so much so that in their EIRs the three companies dedicate a special section in the chapter on socioeconomic impacts on fishing, there is no mention of occupation of the sea. The “unoccupied”, “free” or “scarcely populated” space is the continental space, where people live, the space of society. In the development discourse, fishing is reduced to the income of families and is not considered an actual, practical, work activity that has unique characteristics and is essential for the life and identity of the fisherman as such. Therefore, from the enterprises’ view, the sea can be occupied, being enough to indemnify fishermen in

cash (since the problem is income) and everything will be “compensated”. The demarcation of the ocean areas where fishing is carried out is not found in any of the environmental impact reports, nor there is clear information about areas to be excluded from fishing when the projects are installed and operative. This fact also highlights the clear split between society and nature present in the development discourse: the sea is considered “nature’s space” and, therefore, an “empty space” for development, which can be freely occupied by port enterprises.

In other documents, such as development plans and press reports, the maritime space, when mentioned, appears as the development space due to the discovery of oil in the pre-salt layer. The sea, then, becomes “entidad desarrollable”, which should be occupied by oil and gas exploitation activities.

From exploration to refining, the [oil and gas production] chain grows towards full integration [...]. This is the year of strengthening the oil and gas business chain in Espírito Santo. As of 2014, it will be almost complete. In addition to oil exploitation and production, investments are being made in shipyards and ports to serve the sector in the South and North. The last stage of the chain, oil refining, is also planned [...]. In the offshore part, the year begins with the arrival of the new platform for Parque das Baleias, the P-58, whose production will start in the next few days. The unit that will produce in pre- and post-salt fields, has the capacity to extract 180,000 barrels of oil and gas per day. (Zandonadi, 2014)

This piece of news published in the state press, widely praising the growth and integration of the oil and gas production chain, makes clear the view that the sea is a space that should also be industrially exploited in order to achieve development.

The formation of the discourse of “empty space” is also felt by fishermen, who often manifest that “fishing has long since forgotten. They treat us like as if we do not exist. In the municipality’s master plan, fishing is not even considered an economic activity” (conversation with the secretary of Presidente Kennedy Fishing Colony, registered on a fieldwork diary, on 26/04/2016, Presidente Kennedy-ES). A fishing technician, in turn, made the following comments about the arrival of the projects on the south coast:

Emptying artisanal fishing is pushing artisanal fishing into subsistence again. Kind of, that fisherman who was here just now, he goes fishing to get fish to eat, because he won’t be able, commercially, to live on fishing anymore. And then what happens? The middlemen appear, who buy their fishery at any price. Kind of, the guy goes with his big boat and catches a thousand kilos of fish. Then, it’s R\$5.00 per kilo. Okay, he caught a thousand kilos. Now he goes and catches 10 kilos. Then it doesn’t pay him, got it? And then he loses. He keeps losing. And the government finds it easier, what? To relocate. Displace the families. We cannot understand this. Kind of running over them. To make development is like replacing the light bulb. For example, this lamp is burned out. Then I say: “a lamp is lacking here in the room”. Then he goes there, takes the lamp from the bathroom and puts it here. Gee, you’re solving one problem by creating another. They want to set up a port here, it will generate jobs and everything else, but what are they going to do with this community? (Interview with a fishing technician, 25/02/2016, Maratáízes-ES)

In the comment above, when the technician mentions the “emptying of artisanal fishing”, he refers to what many fishermen mentioned as “fishing is forgotten”, “it’s as if we didn’t exist”, “fishing is being massacred”, among other ways of expressing the feeling that the development of the south coast does not encompass this economic activity. It happens as if they were not there. Otherwise, when fishing is considered by the development discourse, it is often seen as something that gets in the way, that needs to be changed, transformed, improved, that is, it is seen as something negative that must end so that development becomes possible.

By realizing the presence of artisanal fishermen as a factor that “hinders” development, as it means the presence of “backward”, not modern, economic practices, it is suggested that fishermen stop being fishermen, to becoming salaried, modern workers. Another way to make the fishing space empty is not to consider the presence of this activity in official documents, as “development agents” did when they did not recognize fishing as an economic activity in the Master Plan of the Municipality of Presidente Kennedy (MPM). Designed and approved to make Porto Central’s investments possible, the MPM was the “emptying” of fishing. It was not there, had been eliminated by the development discourse. However, it is noteworthy that about 500 families survive from artisanal fishing in that municipality, which has about 3,000 households.

4 Disputes over development on the south coast of Espírito Santo

So far, it has been presented how the south coast of Espírito Santo was being constructed as an “empty space” by the development discourse, which presents itself as a myth, is updated through rites and separates time and space, fixed and flows, society and nature, in an attempt to transform the south coast in order to impose on it the heterogeneity of the market economy.

However, there is various forms of social interaction embedded in the social fabric, which are being strengthened, recovered, rescued, maintained as forms of resistance by “common humans”, by *new communities* that face development as an illusory expectation. Esteva (2000) states that “development” is nothing more than a conservative, reactionary myth and that the *new communities*, based on the organization of their own ways of life and the definition of their own needs, tend to recover their independent ways of living.

Regarding the diverse forms of social interaction, in order to better understand the phenomena involving development in the south coast of Espírito Santo, the propositions about space/spatialities presented by Massey and Keynes (2004) seem adequate. That is why, up to now, we avoided using the terms territories/territorialities, always referring to space, spatialities. This is because, for the referred authors, space is the product of interrelationships, constituted through interactions that enable the existence of multiplicities, distinct trajectories, multiple voices. “Without space, no multiplicity; without multiplicity, no space. If space is indeed the product of interrelations, then it must be predicated upon the existence of plurality. Multiplicity and space are co-constitutive” (Massey; Keynes, 2004, p. 8).

Another relevant aspect presented by the authors is the fact that, if space is the product of interrelationships, it is always under construction, it is always being made and it is never finished. This continuous process of making itself from interrelations also includes the relational construction of political subjectivities and identities. Thus, as Massey and Keynes (2004, p. 10) suggest, to recognize multiplicity and difference, it is necessary to recognize spatiality and a “genuine openness of the future”. It is, therefore, necessary to abandon the foundations of “progress”, “development” and “modernization” that are based on propositions of known future scenarios. In the proposed concept of spatiality, space and history are “open”.

Massey and Keynes (2004) argue that by using qualifiers such as “advanced”, “backward”, “underdeveloped”, “developed”, “modern” spatial differences are explained as being temporal.

This conception of space in temporal terms is a way of conceiving the difference, which is typical of many of the great modernist readings of the world. The stories of progress (from tradition to modernity), development, modernization, the Marxist fable of evolution through modes of production (feudal, capitalist, socialist, communist), many of our current stories about ‘globalization’ (Massey, 1999) [...] all of them share a geographical imagination that reorganizes spatial differences in terms of temporal sequence. This entails that places are not genuinely different; in fact, they are simply either ahead or behind in a same story: their ‘differences’ consist only in the place they occupy in the line of history (Massey; Keynes, 2004, p. 15).

This explanation of spatial differences in terms of temporal sequences is criticized by the authors, who argue that the true political recognition of difference must understand it as something more than a place in a temporal sequence. It is necessary to recognize the contemporaneity of the difference, “to recognize that the ‘others’ really exist and may not be just following us” (Massey; Keynes, 2004, p. 15). It is therefore necessary to take into account the possibility of the coexistence of a multiplicity of stories.

Another criticism made by the authors concerns the “modernist” view of space that, besides promoting space-time separation, also promotes a space-society separation. The geographic space, according to this view, is divided into localities, places, regions, based on the assumption that there is, in each of these portions, a particular form of social organization, whose identities would have been internally generated and pre-constituted. Therefore,

the argument is that, for conceptualizing space/spatiality it is crucial to recognize its fundamental relationship with and its constitution through the coexistence of difference(s) – the multiplicity –, its ability to incorporate the coexistence of relatively independent trajectories. It is a proposal to recognize space as the sphere of encounter, or not, between these trajectories – where they coexist, affect each other, fight. Space, then, is the product of difficulties and complexities, of the intertwining and non-intertwining of relationships, from the unimaginably cosmic to the intimately small. Space, to repeat once more, is the product of interrelationships (Massey; Keynes, 2004, p. 17).

As a product of interrelationships, space carries a certain degree of unpredictability and chaos (of what is not yet prescribed by the system), because in the process of being made there are unpredictable juxtapositions and accidental separations. For these authors, then, “space is not a surface”, it is not “like a container for things” and is not based on a normal course of a process, on the contrary, it is inherently “disruptive”. And it is precisely because space is the potential juxtaposition of different narratives that spatiality becomes a potential source of new trajectories. Space can then be seen as part of the generation and production of the new and the construction of identities. From this point of view, taking space as a category of analysis implies, according to the authors, recognizing the different ways in which interrelationships occur, including from the point of view of social power, relationships of subordination and the potential capacities that they can produce (Massey; Keynes, 2004).

In this sense, Escobar (2020) reaffirms his criticism of development as a practice that intends to impose a single colonial development project and proposes the notion of pluriversal politics. For him, the pluriverse – a world consisting of many worlds – opens up the possibility of creating different possible futures that can bring about the profound social transformations necessary to face planetary crises. The author relies on the perception that, by engaging in an ontological critique of large mining projects, Latin American social movements expose the differences present in the territories and the disputes around them, drawing attention to the “politics of the possible”.

Considering production of discourse as an unequal power relationship, development discourse as the imposition of a determined future that entails contention and resistance, and spatiality as a result of interrelationships that allow for coexistence of differences and for potential juxtaposition of different narratives, it becomes easier to understand the disputes over the initiatives for development of the south coast. This is because the south coast comprises a space where differences are present and, sometimes, come into dispute.

The large development projects encouraged by the Government of Espírito Santo from the 2000s onwards and undertaken through actions by both the public power and large private business groups, for example, pose a threat to the survival of local communities. These projects, justified by the homogenizing development discourse, do not recognize the presence of differences in that space and come to impose a predetermined future that aims to free the south coast from underdevelopment (backwardness) and “emptiness” and take it to the future time of development that means, in this case, the integration of communities into the logic of the market economy and the optimization of the use of the existing resources.

It begs the question of which communities in this region are made invisible by the discourse of underdevelopment and “emptiness”. These are, basically, smallholder family-farmers, descendants of indigenous people, artisanal fishermen, men and women, children, young people, adults and the elderly who profess different religious beliefs and interrelate with each other to produce distinct identities.

One of the differences worth noting that is present on the south coast is “being artisanal fisherman”. This is not just about fishing using rudimentary

techniques, in small boats and with a dependent relationship with the market. It is far beyond that. When the fisherman from the Pontal community, in Maratáizes, says “Hey!! you will build over me!”, he is not only referring to the fact that the port terminal of Itaoca Offshore will be built over the main shrimp fishing ground in Espírito Santo, but also that the company overlooks the way of life of fishermen, their problems, their conception of what would be good for them, their possibilities of choice. In this sense, this same fisherman, when asked what it means to him to be a fisherman, replied:

It is a culture, indeed. I learned how to fish with my father, how to cast the net with my father, my brothers taught me about navigation, that is, all this has passed from father to son and will found a culture. This is something that... – it’s like getting there in the countryside today – if you take fishing away from us here, it’s like reaching the countryside, taking a farmer of 60, 70 years old from there and leaving him in the city to manage a company. He wouldn’t know what to do. No way! He would die the next day. It’s not his habitat. That’s what fishing is for us today (Interview with fisherman from Pontal, 02/25/2016, Maratáizes-ES).

Still on the subject, a fisherwoman replied:

Ah! I like it. I like it. Since I was a child, I’ve seen Dad doing this. Here all the children see their parents doing the same things. My boy is 13 years old and he already goes to the sea. It’s the tradition. I think fishing is a tradition that passes from father to son. (Interview with fisherwoman from Pontal, 03/10/2016, Maratáizes-ES)

In an interview with a shellfish collector, we asked if she would like to stop collecting shellfish, if she would imagine having a different life. She answered:

No. It’s because we’ve already worked, but although being heavy, being a struggle, it’s fun. You see, even he [referring to Mr. Lili], with his fully-white hair, stays with us there. It’s heavy, indeed, it’s a really big struggle, but it is fun. It brings everyone together. Because we, there, are like a cooperative, our whole family there. But it’s good. It’s bad for those who go there to take it off, to lift that weight that tires out, but in the end everything goes well. It’s our life. (Interview with shellfish collector from Itaipava, 02/24/2016, Itapemirim-ES)

These narratives demonstrate the presence of differences in space and, more than that, that artisanal fishermen identify themselves as such and do not want to abandon “their lives” in the name of a development that they do not imagine for themselves. There is, on the south coast, a way of life that wants to face up to development, that often goes against it in disputes that, even facing a strong asymmetry of power, considering agents such as the State, enterprises and artisanal fishermen, represent an important counterpoint to development.

Another striking difference present in that space is that of distinct “knowledges”. With the arrival of the development discourse, the traditional knowledge and wisdom of fishermen, transmitted for generations, are deemed obsolete. The fishermen need to be qualified to acquire modern, technological knowledge.

This project was conceived for ES because ES has an extensive port culture. [...] We understand as development that ES already had strong roots, knowledge of port operations. The offshore support operation is the most basic operation of the port, of port activity. [...] It needs workforce... jib crane operators... This is, perhaps, the most qualified activity there at the edge of the port. [...] Without a doubt, this knowledge was already inserted in the DNA of the population here. [...] ES is in the logistical chain that offers [guidance on] how to “put your foot in the water”. [...] This is our development concept, obviously we want... I don't know if you grasped what workforce skills we want for the place we are going to. It is very important, because there is a demand in an area of influence of the project from the three municipalities there. There is a workforce base there that comes exactly from agriculture, livestock and fishing. So, the activity can have its workforce needs met in the region without the need to import labor, or bring in labor, which is always a risk for the entrepreneur. [...] This is what development means for us, we prepare the workforce, preferably locally, generate employment, generate income, and this entails consequences in concentric circles [...]. We will have to train some workforce in partnership with the relevant departments that will be with us in specific activities. There comes the political side. The [municipal] secretariats sometimes offer courses without analyzing the potential demand, their consequences. You see? If you know that the port will open up opportunities, if you estimated your workforce and you know that it is not qualified for activities that are natural consequences of the port operation, why not qualify them? (Interview with director of Itaoca Offshore, 03/11/2016, Vitória)

This excerpt shows a contradiction. Although the interviewee starts stating that there are people in the state who “know how to put their foot in the water”, he ends up saying that the workforce needs to be qualified. Why that? Because port projects do not need fishermen, workers who know how to “put their foot in the water”. They need modern workers, from administrative, automation, logistics, civil construction areas, among others.

The time/space of fishing is also a determining factor in the way knowledge is built in the communities. Fishermen's knowledge is orally transmitted from parents to children. If the time/space of fishermen's life is determined by nature, how could they attend formal school? How could they, as entrepreneurs want, participate in professional qualification courses?

Interviewer - Have you taken any of these courses that they offer?

Fisherman – No. No, because the city hall courses require a schooling level that we don't have.

Interviewer - Did you study until what grade?

Fisherman's wife - He studied until the fourth grade and I studied until the sixth. [...]

Interviewer - If you want to study, is there a school? Let's suppose a study class was available for you here...

Fisherman – Ah! But I also don't want to study anymore, no!

Interviewer - Don't you want to study anymore?

Fisherman – No. Not me! How will I study and keep my family? I have to work, how can I study, right? I have to go to the sea. (Interview with fisherman from Marobá, 05/04/2016, President Kennedy)

For public authorities and entrepreneurs, it seems to be enough to offer professional qualification courses – whether to qualify workforce for port activities, or to provide services in general, such as restaurants, hotels and lodges, civil construction, beauty salons, among others – for promoting development, generating jobs and income for the “former” fishermen. However, besides the fact that many fishermen want to continue fishing, after all they are fishermen, attending school or professional training courses is impossible for those who must go to the sea at the time determined by nature (time of presence of fish in fishing grounds, time when weather conditions permit etc.). They not always are able to be on land to meet the fixed schedules of the courses. The fisherman's relationship with time and space is radically different from that intended by development agents.

Work is also a difference present in the space on the southern coast of Espírito Santo. Here there is, on the one hand, the work of the fisherman, autonomous, with his craft and his decisions, to some extent, independent. On the other hand, the salaried, modern, dependent work, with predetermined hours and tasks, which is expected from the port workers.

I'm glad you're going to do this research. You will, thus, help us understand what the fishing communities want. They [the fishermen] seem not to want to work in another profession, to have a formal contract, have a boss, work 40 hours a week. They complain about the way they live, but do not accept the proposed changes. We don't know what they want (Informal conversation with an official from the State Department of Development, 03/11/2016, Vitória).

This reveals not only a fundamental difference between the forms of work, including a resistance on the part of some fishermen to become modern workers, but also a difference in points of view and perspective. Undoubtedly, for the “agents of development”, here represented by this government employee, the starting point for improving living conditions of fishing populations is changing their profession and the way they work, that is, “qualifying” them, since the development discourse disqualified the fisherman, to get a paid job on land: in short, transforming them into modern workers. However, from the perspective of the fishermen, the improvement of their quality of life involves improving their fishing activity. Fishermen perceive themselves as qualified to carry out their activity, fishing, and claim the right to be able to live better as fishermen. Given that, they express concern about the reality in which they live, countering the arrival of port projects, which, in their view, will mean the massacre of fishing. In informal conversation with an artisanal fisherman, he repeatedly claimed that fishermen are being massacred. “Inshore fishing will be impeded by the construction of ports. Offshore fishing (80 miles) is also hampered by oil exploitation.” He used the word “massacre” several times to refer to fishermen (Note in fieldwork diary, 05/09/2015).

Fishing has long been forgotten. They treat us as if we don't exist. [...] The sector is suffering; this is a fact. It's not just [Presidente] Kennedy. The sector is suffering a lot. This is a battle you can't win (Interview with fisherwoman from Marobá, on 04/26/2016, Presidente Kennedy).

The artisanal fisherman, when faced with the devices of development such as, for example, meetings, plans, projects, public hearings, compensation activities, among others, perceives himself as an artisanal fisherman, reaffirms his condition of artisanal fisherman and, from his perspective, reaffirms the desire to continue being an artisanal fisherman, in opposition to the development discourse.

In such disputes, the presence of non-human agents becomes clear. One of the actants in the configuration of disputes over development projects on the southern coast of the state is the sea. The sea, for example, which was once a living space for fishermen, a leisure space or a beautiful landscape for bathers and tourists, is now also a “sea of oil” that has needs, personified. “This sea of oil that we have right there *requires* an infrastructure, in order to become a reality, otherwise *it will continue there* for another million years”. (Interview with director of Itaoca Offshore, 03/11/2016, Vitória – emphasis added)

However, this same sea is a habitat for fish, shrimp, lobster, among other beings that are responsible for providing the survival of whole fishing communities and that, when faced with the infrastructure facilities necessary for the sea of oil, “go away”, or die, or move. The fish, for example, disappears because of the noise of large vessels, the lights on the platforms, the presence of ships that carry out seismic surveys.

Even from Anchieta [a municipality close to Itaipava] you can see the platforms burning, pulling the oil from near the beach, the coast. The fish from that edge over there *disappeared*. It put an end to the fish of those people who went to the sea at 4 am to go there to catch their fish for a living. There, quite near there, an hour or two from the coast, take out your little fish, even with a line, the fisherman knows how to take the fish out of the water with his own line. [Fishing] *broke down*. (Interview with fisherman from Itaipava, 02/24/2016, Itapemirim – emphasis added)

Now there is no more beltfish. Why did it leave, where did it go? Now the seismic [vessel that does seismic research] throws his trap there and the fish dies. Was it [the fish] caught? No. Most of the fish over there is dead because the thing [the vessel] is killing it. It's no use for them to keep on. (Interview with fisherman from Itaipava, 02/24/2016, Itapemirim)

But the fisherman's life is life only with fish. (Interview with fisherman from Marobá, 05/04/2016, Presidente Kennedy)

If the sea “needs infrastructure” and if, with it, the fish “goes away”, the fisherman’s life ceases to be life. Thus, sea, fish, oil all act to build the conflicts that surround development projects on the southern coast of the state, since they place entrepreneurs and fishermen in opposing fields.

In the development discourse, the pre-salt also constitutes a non-human subject that has agency in disputes. Icon of the oil industry for energy production, the pre-salt “wiped the fish out of here. It brought a lot of people. It brought robberies, drugs, teenage single mothers, high rates of HIV. And we are awaiting this said progress to come” (Interview with a community leader of Marobá, 28/04/2016, Presidente Kennedy).

On Itaoca beach, next to the Itapemirim river mouth, the ground of shrimp farmers, “the shrimp no longer wants to enter the estuary to reproduce because it is polluted, and this problem will be even greater after the installation of the port terminal” (information obtained in an informal conversation with a fisherman from Pontal, on 02/25/2016, noted on fieldwork diary). If the shrimp no longer reproduces there, the shrimp farmer's existence will be threatened.

If, for the fishing communities, nature acts in the constitution of the fisherman as such, for the representatives of the enterprises it offers the resources from which their businesses will obtain “greater profits”, which will provide “greater competitiveness” to the state of Espírito Santo and “more energy for the production of wealth” to the country. Thus, the perspectives about nature on the part of fishermen and entrepreneurs are *radically different*, although nature is extremely necessary for the existence of both of them.

There is also a third point of view about nature, which was expressed mainly by representatives of the municipal government: the nature that needs to be preserved, conserved, restored. There is talk of “development with sustainability”.

Today, when it comes to development, we are always learning. We abused the nature, now we have her backlash. She showed a warning signal. The issue of the mud that destroyed one of the most important rivers in the country is very current. Anyway, the human being needs to follow this up, right? *Nature showed the strength of what we had done, so today we talk about sustainable development.* (Interview with deputy secretary of Agriculture of Marataízes, 03/16/2016, Marataízes – emphasis added)

Nature, with its transformations or disasters, imposes risks for the humanity, requiring actions for preservation, conservation, restoration. To that end, normative mechanisms are created in order to regulate human activities that in some way affect the environment.

Development is the balance between the economy and sustainability. We think development considering the issue of sustainability, so that you will have the development of the social issues with respect to the environment, with vegetation, fauna, flora, the entire physical, biotic and anthropic environment. We consider everything. Not only the anthropic issue, not development as just improving the quality of life. We cannot improve the quality of life by just improving the economic issue. So, we seek to improve the quality of life, actually, to the point that we can improve the environmental, health, quality of public services, all of this. (Interview with technicians from the Environment Department of Marataízes, 05/31/2016, Marataízes).

The implementation of large development projects requires dialogues, debates and, at times, disputes around the environmental issue, what requires entrepreneurs to adapt projects to current legislation, discuss with the local community, carry out environmental compensation actions, among others.

The various differences present in the southern coastal space of Espírito Santo, here discussed, whether they be differences regarding knowledge, forms of work or relationships between human and non-human agents that impose different

living conditions, are clear demonstrations that this space cannot be considered “empty” as the development discourse suggests. On the contrary, they allow us to perceive diverse presences that pose even situations of environmental conflicts.

5 Final remarks

By way of brief final considerations, the following points can be highlighted: first, that development is part of a *system of discourse subjection* under asymmetrical power relations and that it does not exist except as a future, predetermined perspective. In other words, development is a one-way path that must lead to modernization and urbanization; second, that the practical actions resulting from the development discourse, insofar as they are intended to homogenize, do not allow for the existence of differences within the space and, thus, do not recognize the distinct and autonomous identities present. On the contrary, if such identities are considered at some point, it is to label them as backward and to push for their extinction. This fact makes it clear that development does not mean the same for everyone.

However, it must be considered that the space shelters differences – see, for instance, the existence of artisanal fishing communities – and that, as Foucault (1998) and Esteva (2000) noted, these are opposed to the dominant discourse, they spark struggles, resistances, disputes.

Considering, particularly, the disputes that occur on the south coast of Espírito Santo, some stand out, as those that concern the maintenance of the artisanal fisherman’s way of life, distinct knowledges, ways of working, relationships with non-human agents as, for example, the sea, fish, oil, plans, projects, among others. Rather than indicating an “empty” space as intended by the development discourse, they expose a space occupied by different contending “presences”, a pluriverse in which several futures are possible.

References

- ALMEIDA, J. Da ideologia do progresso à ideia de desenvolvimento (rural) sustentável. In: ALMEIDA, J.; NAVARRO, Z. **Reconstruindo a agricultura: ideias e ideais na perspectiva do desenvolvimento rural sustentável**. Porto Alegre: Editora da UFRGS, 3a ed., 2009, p. 33-55.
- BERNARDES, N. Expansão do povoamento no Estado do Paraná. **Revista Brasileira de Geografia**, v. 14, n. 4, p. 53–82, 1952.
- C-PORT LOGÍSTICA OFFSHORE BRASIL LTDA. **Relatório de impacto ambiental da Base de Apoio Logístico Offshore**. Itapemirim-ES: [s.n.], 2012.
- ESCOBAR, A. **Territorios de diferencia: lugar, movimientos, vida, redes**. Popayán-Colombia: EnVión, v. 53, 2013.
- ESCOBAR, A. **Pluriversal politics: the real and the possible**. Durham, NC: Duke

University Press, 2020.

ESPÍRITO SANTO. **Secretaria de Desenvolvimento**. 2016. Disponível em: <<http://www.invistanoes.es.gov.br/>>. Acesso em: 13 set. 2016.

ESPÍRITO SANTO EM AÇÃO. **Espírito Santo em Ação**. 2016. Disponível em: <http://www.es-acao.org.br/index.php?id=/institucional/espírito_santo_em_acao/index.php>. Acesso em: 13 set. 2016.

ESTEVA, G. Desenvolvimento. In: SACHS, W. **Dicionário do desenvolvimento**: guia para o conhecimento como poder. Petrópolis: Vozes, 2000, p. 59–83.

FLEURY, L. C. **Conflito ambiental e cosmopolítica na Amazônia Brasileira**: a construção da Usina Hidrelétrica de Belo Monte em perspectiva. 2013. 318f. Tese (Programa de Pós-Graduação em Sociologia) - Universidade Federal do Rio Grande do Sul, Porto Alegre, 2013.

ITAOCA OFFSHORE. **Itaoca terminal marítimo**: relatório de impacto ambiental. Itapemirim-ES: [s.n.], 2013.

MACIEL, D. P. O Estado na integração de territórios vazios à nação brasileira (1943-1968): atuação da Fundação Brasil Central na região Médio Araguaia. In: **Anais do XXIV Simpósio Nacional de História**. São Leopoldo: Unisinos, 2007. CD-ROM.

MASSEY, D.; KEYNES, M. Filosofia e política da espacialidade : algumas considerações. **GEOgraphia**, v. 6, n. 12, p. 7–23, 2004.

MOREIRA, V. M. L. Vazios demográficos ou territórios indígenas? **Dimensões**, v. 11, jul/dez, p. 137–144, 2000.

RAYNAUT, C. As relações ser humano/natureza: a arqueologia social de uma ruptura. **Mimeo**, p. 1-17, 2006.

RATZEL, F. Le sol, la société et l'état, **L'Année Sociologique**, ano 13, p. 1-14, 1898-1899.

RIST, G. **The history of development**: from western origins to global faith. 3a. ed. London; New York: Zed Books, 2008.

TPK LOGÍSTICA S. A. **Relatório de impacto ambiental do Porto Central Presidente Kennedy/ES**. Presidente Kennedy-ES: [s.n.], 2013.

ZANDONADI, D. Riqueza do petróleo: novo momento eleva investimento no Estado. **Gazeta Online**, Vitória - ES, 2014.

Ana Cláudia Hebling Meira. Doctor. Federal University of Espírito Santo. Professor and researcher at the Federal University of Espírito Santo (UFES) and at the Master in Agroecology at the Federal Institute of Espírito Santo (IFES-Campus de Alegre). Leader of the Grupo de Estudos e Pesquisas em Ambiente e Sociedade nos Espaços Rurais – GEPASER/UFES, ana.meira@ufes.br

Jalcione Almeida. Doctor. Federal University of Rio Grande do Sul. Professor and researcher of the Graduate Program in Sociology (PPGS) and the Graduate Program in Rural Development (PGDR) both at the Federal University of Rio Grande do Sul (UFRGS). CNPq researcher. Leader of the research group Tecnologia, Meio Ambiente e Sociedade (TEMAS – www.ufrgs.br/temas), jal@ufrgs.br

Submitted in: 03/02/2020

Approved in: 27/05/2021

CONTRIBUTIONS OF EACH AUTHOR

This article is part of the doctoral dissertation in Rural Development by Ana Cláudia Hebling Meira, under the supervision of Jalcione Almeida.

Conceituação (Conceptualization) – Ana Cláudia Hebling Meira – Jalcione Almeida

Curadoria de Dados (Data curation) - Ana Cláudia Hebling Meira

Análise Formal (Formal analysis) - Ana Cláudia Hebling Meira

Obtenção de Financiamento (Funding acquisition) – Não se aplica

Investigação/Pesquisa (Investigation) - Ana Cláudia Hebling Meira

Metodologia (Methodology) - Ana Cláudia Hebling Meira – Jalcione Almeida

Administração do Projeto (Project administration) - Ana Cláudia Hebling Meira

Recursos (Resources) - Ana Cláudia Hebling Meira

Software – Não se aplica

Supervisão/orientação (Supervision) – Jalcione Almeida

Validação (Validation) – Não se aplica

Visualização (Visualization) – Ana Cláudia Hebling Meira

Escrita – Primeira Redação (Writing – original draft) – Ana Cláudia Hebling Meira

Escrita – Revisão e Edição (Writing – review & editing) – Jalcione Almeida

Funding sources: Research developed within the scope of the Teaching Training and Qualification program of Federal University of Espírito Santo, teacher's leave under limited onus /UFES.