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The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2018 Volume 5 Number 4 (June)
http://doi.org/10.9770/jesi.2018.5.4(1)

Publisher

HYDROELECTRIC PROJECTS AND TERRITORIAL GOVERNANCE IN REGIONS OF THE STATE OF PARÁ, BRAZILIAN AMAZON*

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Received 20 February 2018; accepted 10 May 2018; published 30 June 2018

Abstract The public and private institutional dynamics in the process of developing territories impacted by large hydroelectric projects have faced challenges over time in different aspects. The challenge is not only how to build participatory governance at different levels, but how to promote democratic and responsible vertical conceptions among actors at each level, considering the sharing of irreversible socioeconomic impacts caused by this enterprises in the Amazon. The construction of new relations between ordinary people and institutions - government, companies, society - forces the constant search for the establishment of strategies to establish social relations for the construction of models of territorial governance still in initial experiences in the state of Pará. To identify impacts, conflicts and territorial governance in areas of major projects: what has literature shown of experiences in the Amazon?

Keywords: Brazil; Legal Amazon; Territorial Governance; Hydroelectric Projects

Reference to this paper should be made as follows: Rocha, G. M.; Neves, M. B. 2018. Hydroelectric projects and territorial governance in regions of The State of Pará, Brazilian Amazon, *Entrepreneurship and Sustainability Issues* 5(4)**:** 712-723. https://doi.org/10.9770/jesi.2018.5.4(1)

JEL Classifications: 021

* *This research was supported by the project AguaSociaL an FP7-PEOPLE-2013-IRSES - Marie Curie Action "International Research Staff Exchange Scheme", Grant Agreement Number 612633*

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1. Introduction

Since the 1950s, the Amazon has been the target of the planning of large projects for the energy sector, since it has more than 50% of Brazil's energy potential, according to Fearnside (2015). In the State of Pará two major projects stand out: the Tucuruí Hydroelectric Power Plant, in operation in 1984 and the Belo Monte Hydroelectric Power Plant, in operation in 2016.

Projects in the energy sector are part of a national development strategy focused on economic growth, however it has a history of poor relation with impacted communities, since many authors and documentaries report the adverse impacts caused by these enterprises, detached from territorial development. National strategy has revealed itself to be of an excluding nature, rendering the development process extremely unbalanced and adverse for the Amazon (Iorio et al. 2018; Izuymov et al., 2017).

Appropriation of water by public and private enterprises in order to produce energy may threaten the process of universalization of access to water. Furthermore, it can damage local economies (e.g. through the interruption of water flows that could have otherwise been used for transportation and commerce) with huge negative impacts being suffered mostly by the local communities (Monni et al., 2018; Valuiskov, 2016).

The relationship between the implementation of large investment projects, especially large hydroelectric projects and local populations, has become a recurring feature of the debates on regional and local development in the Amazon (Vainer and Araújo, 1992).

It should be noted that, in peripheral regions, the implementation of large investment projects profoundly transform land use and occupation, the way of life of the regional populations, the demographic contribution and the settlement system and the network of cities, breaks, in a sense, with the circuits of accumulation and development historically constructed, redefining the regional reality (Rocha, 2008).

Vainer and Araújo (1992) emphasizes that these changes recreate the region from the big investment projects. In other words, large projects continue to have great potential for organizing and transforming spaces, a great potential for breaking down and composing regions. An angular point of this issue is the appropriation of the benefits generated by the hydroelectric projects in the region.

In the last thirty years with the maturing of social and environmental discussions, international organizations and financiers, like the World Bank, joined in 1998 new means of development, considering Physical Capital, Human Capital, Social Capital, Institutional Capital and Natural Capital in the so-called Integral Framework of Development to reverse the socioeconomic damages caused by the use of natural resources.

In this context is that learning with the hydroelectric plant of Tucuruí, and more recently with Belo Monte, that the search for new development strategies should consider the conservation of natural resources, the quality of institutions, gender equality, the importance of knowledge and the participation of the local population, the latter reaffirming the importance of social capital, according to Satrústegui (2013).

This article will discuss the projects of the hydroelectric plant of Tucuruí and Belo Monte, identifying the impacts, conflicts and territorial governance of these enterprises and what literature has shown about their experiences, considering the historical and political time in which each of these projects were planned and built in the State of Pará.

ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2018 Volume 5 Number 4 (June)
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2. Large hydroelectric project in the Amazon

In order to reach a consensus on the importance of territorial governance for regional development around these projects, it is necessary to understand a brief history of hydroelectric projects in the Amazon.

The decision to generate energy through a hydroelectric plant as an energy matrix in Brazil is justified due to the great potential of water resources available in the country. According to Moretto et al. (2012), Brazil has a hydroelectric potential of 260 thousand MW, and in the Amazon this potential is 132 thousand MW (51%) and other regions 125 thousand MW (49%).

One of the first legal instruments to regulate the use of water resources was the Water Code (Decree 24.643 / 1934) that guided the first hydroelectric dams. In search of better technological conditions to conduct the energy sector, Eletrobrás was created in 1962 to coordinate all electric power companies and conduct inventories to identify the hydroelectric potential in all Brazilian territory with resources from the Special Fund of Nations Units and the World Bank (IBRD).

Moretto et al. (2012) emphasizes that the low degree of discipline regarding environmental regulation of large projects has a great influence on the design of these projects and their consequences. Of the 57 hydroelectric plants installed up to 1979, 55 were built in the south and southeast regions, close to the industrial consumer centers and with socio-environmental impacts of little national reverberation. In this period the model of development adopted by the Military Regime in Brazil was based on traditional economic growth "at all costs" (Pike et al., 2006) as identified by Bradford (2012) in research on local economic geography.

The Amazon Region holds about 51% of the Brazilian hydrographic scenario and the State of Pará has a water availability of 62% of the total freshwater in the Amazon, 40% of the national stock with 25% of all Brazilian hydroelectric potential, which 85% still not used, according to Moretto (2012).

In the 1970s, in the midst of international discussions on the environmental issue with the Stockholm Conference (1972), the first and second National Development Plans (1972 - 1974) were elaborated with emphasis on the industrialization of the durable consumer goods sector for the sector of the steel industry, according to Bortoleto (2001). The search for autonomy in basic inputs was strengthened by international pressures and incorporated by the World Bank, the main financier of the hydroelectric dams.

In the 1980s, the 2010 Decennial Plan was revealed with the forecast of 79 dams in the Amazon Region, large of them in the Amazon, Xingu, Tocantins, Araguaia and Tapajós Rivers, which provoked a lot of criticism, according to Fearnside (2015), that last until today, 35 years later. Even though Amazonia has come to represent the national scenario as a region of excellent opportunities and investments with great hydroelectric potential, it has been and still is the target of negative social and environmental impacts of these major projects (Map 1).

According to the State Department of Environment and Sustainability (Semas, 2016), 58% of the territory of Pará is composed of protected areas, including federal, state and municipal Conservation Units, Indigenous Lands and Quilombolas (remanescent population from slavery period). A multi-ethnic scenario with many historical restrictions on public policies, which reveals a sad scenario of low social development indexes.

The contradictions of national development have shown great difficulties facing the development of the Amazon, such as unregulated economic occupation, socio-environmental tensions, environmental degradation, land problems, among others, which are complex challenges for federal, state and municipal governments.

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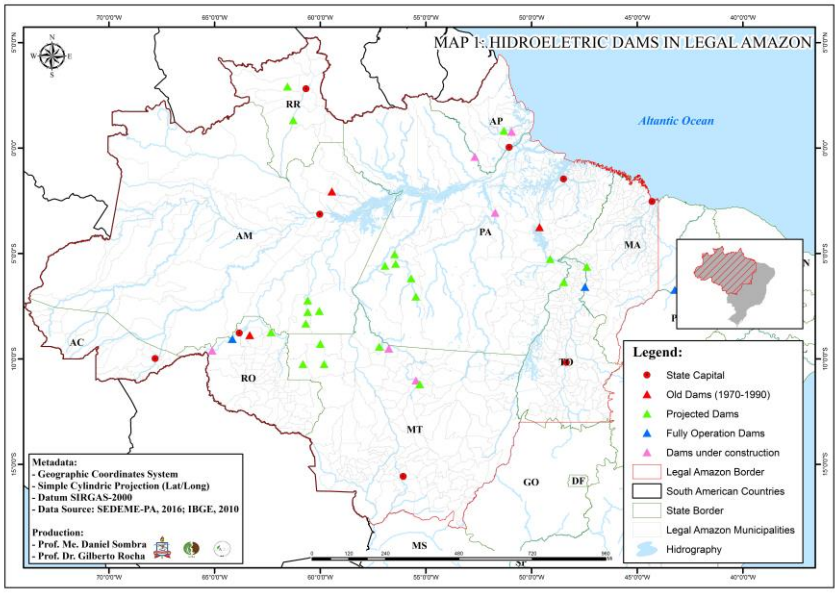
Map 1. Hydroelectric dams in the Brazilian Amazon



Source: Personal Elaboration

These facts show the controversy of the Brazilian energy sector between the economically favorable alternative due to the great hydroelectric potential and the significant environmental degradation as highlighted by Mello-Théry (2016).
With the creation of the National Environmental Policy (Law No. 6.938 / 1981), the environmental licensing of large projects increased, according to article 10º, which says that the construction, installation and operation of activities that use environmental resources that are potentially polluting or capable of causing environmental degradation will depend on prior environmental licensing. However, the 2010 Decennial Plan was indeed put into practice, as it was necessary to generate more energy to meet the country's economic growth, even when the political scenario changed to Republican.

According to Moretto et al (2012), the use of natural resources by hydroelectric projects serves a characteristic development model based on the construction of megaprojects to increase the supply of electric energy. Thus, Tucuruí hydroelectric power plant was built due to supply a large consumer center with iron ore processing in the state of Pará. Technical problems marked the decade and the history of environmental management in the induction of numerous social and environmental impacts with the flooding of about 2500 m² of Amazonian forest.

Alarming and countless records of the social and environmental damage impacts in the Amazon, impacted nationally by the construction of the Tucuruí Hydropower Plant (1984), since flooding of areas was devastating to the local ecosystem and to traditional and indigenous populations, who still suffer from low rates of development, according to Saracura et al (2007).

In 2010, with the start of the construction of Belo Monte Hydroelectric Power Plant, once again the State of Pará is going through these impacts, but now in a Xingu Region with many Conservation Units and traditional peoples, 11 indigenous lands, according to FGV (2015).

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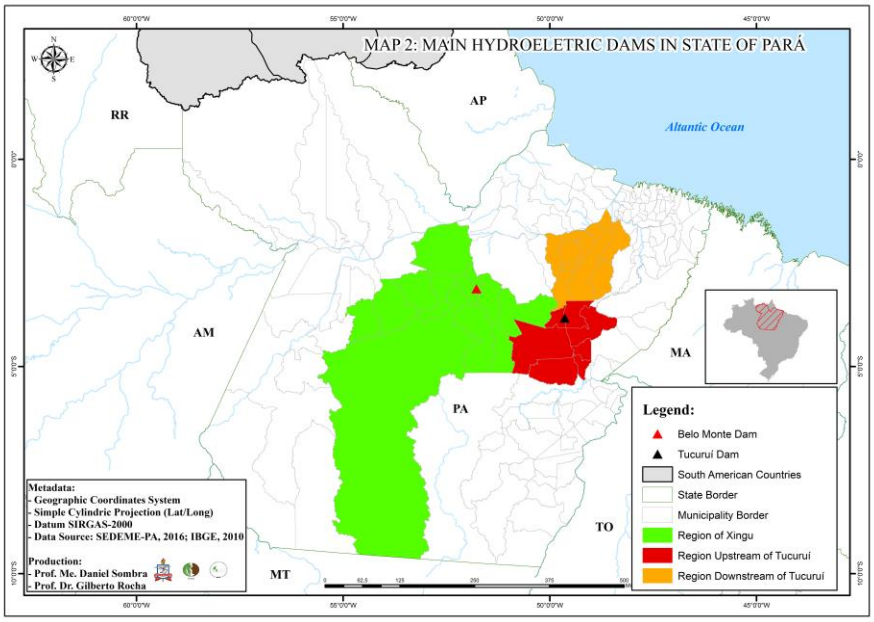
Mello Théry (2016) points out that infrastructure projects in the Amazon cause migratory flows, occupational densities, changes in land use, deforestation, alteration of biological communities, loss of species of fauna and flora, land conflicts and other socio-environmental problems. In the Xingu Region was not different.

The National Electric Energy Agency (ANEEL) was created by Law No. 9,427 / 1996 with the mission of providing favorable conditions to develop the energy sector with balance for the benefit of society. Thus, with the creation of regulatory norms and economic studies of the energy sector to meet the demands of the country, information on the projects developed and new technologies developed gained strength in 2005 with the creation of the Energy Research Company (EPE).

The new element that came with the Belo Monte hydroelectric plant project was the promise that the project would produce the regional development process even before the Previous License analyzed by IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis), which would give time to structure the region to prepare for the socio-environmental impacts. It is in this scenario that the hydroelectric plants of Tucuruí and Belo Monte are distanced by the period and economic, political, social and legal scenario, especially with peculiarities of the territorial characteristics. Currently, both enterprises, due to legal requirements and environmental constraints, have proposals to implement public policies and actions to minimize the impacts generated through social involvement in the formation of territorial governance councils (Map 2).

Map 2. Hydroelectric dams in the Brazilian Amazon



Source: Personal Elaboration

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3. Governance as a territorial development strategy

Authors such as Dallabrida (2007), Tenório (1998) and Cançado et al (2013) highlight the importance of social management as a process of participation of society in public policies for the development of a territory. The social management, such as collective decision-making based on the intelligibility of language, on dialogue and enlightened understanding, must adopt transparency as a presupposition and emancipation as the ultimate goal, according to Cançado (2013). The lack of interaction and dialogue between government, society and enterprises is one of the points of lessons learned in the final report of the World Commission on Dams on Tucuruí Hydroelectric Power Plant (2000).

Social management strategies are also present in the governance model proposed by the National Policy for Regional Development (PNDR) of 2007, in which suggested that dialogue must permeate the process of social relations that are promoted, often through specific actions, response to demands or political interest.

In territories impacted by large projects, it is natural, or a matter of time, the need for dialogue between local society and the enterprise, mainly because social gaps are intensified with the presence of the enterprise. This process is only beginning to be understood before the establishment of a space for negotiation and dialogue according to the precepts of Dallabrida (2011) for the construction of a governance for shared decision-making.

Vieira (2008) understands that social relations constitute a "non-visible", but highly effective, patrimony at the service of social subjects, whether individual or collective. In this sense, social relations based on trust and cooperation are key elements for building and maintaining governance.

Considering governance as the exercise of power and authority to manage a territory or region through processes and institutions which citizens and groups articulate their public interests, including representations of state agents as acting subjects. According to Dallabrida (2011), the need for an institutional relationship, social participation in joint actions of common interest to orchestrate a means of directing public policies becomes clearer, even more with exogenous influences such as hydroelectric projects.
Governance is, in practice, a complex decision-making process that anticipates and surpasses government, according to Milani & Solinís (2002). According to Pereira (2010) and several authors highlighting the texts of Dallabrida (2003, 2007, 2008, 2011), the most evident aspects in the literature on governance are related to the legitimacy of the public space in constitution, to the sharing of power between those who govern and those who are governed, the processes of negotiation between social actors and the decentralization of authority and functions linked to the act of governing.

Regarding territorial governance, Dallabrida (2007) focuses on the definition and management of a territorial development strategy, the establishment of forms of social repairing and the construction of a prospective vision for the future. These processes are not simple to practice in a region with precarious characteristics regarding public management, social participation and with serious problems such as poverty, social inequality and the absence of public policies from all spheres of government such as the Amazon Region.

Faced with the enforced learning by the experiences acquired by the construction of the hydroelectric plant of Tucuruí the social movements have important results in the fight for the answers of the public and private institutions involved in a process of licensing and conduction of a great hydroelectric project. Gaventa (2002) emphasizes among six propositions on participation and territorial governance, the "relationship of people and institutions" being one of the main challenges for the 21st century. The construction of new relations between ordinary people and institutions, especially those of government, that affect their lives.

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Increasingly, there are more mechanisms that can promote these more inclusive and deliberative forms of interaction between the citizen and the state. This institutional interaction presents several forms of understanding and nomenclatures, but all express the participation of local institutions, based on the empirical knowledge for actions and decisions that affect local solidarity, so-called participatory governance.

Given the socio-environmental conflicts experienced in the hydroelectric plants of Tucuruí and Belo Monte in both scenarios, they have absorbed participatory governance methods involving local institutions, social movements and government in the construction of councils and committees in permanent negotiation spaces to mitigate and define new strategies for territorial development.

The negotiation spaces allow the government to approach people by encouraging their participation in public policy in a representative way as a key element of empowering decisions that affect their futures, such as collective innovation processes according to Dallabrida (2010).

To establish a local empowerment, Vieira (2008) mentions the construction of social capital with a political and economic focus and observes the differences in obtaining resources in the emphasis on social networks. These focuses are present in public and private institutions, that is, it is present in the people who represent the institutions and in the strategies of relations established to obtain resources.

The experiences of the populations impacted by the hydroelectric dams highlighted in this article demonstrate articulations, challenges, opportunities and actions regarding peculiar issues, since these scenarios are composed of a society with multiplicity of individuals with diverse interests as analyzed by Filho and Fonseca (2011) when discussing the Douglas North's theories on institutions and social cooperation.

One of the greatest weaknesses in the construction of territorial governance is the quality of available human capital, which is necessary to develop intellectual capital with schooling and professional training, so that social capital has the ability to articulate networks of community integration and interorganizational, aiming to develop the ability to discuss and define consensus for the establishment of collective objectives.

4. Governance as a territorial development strategy

Tucuruí Hydroelectric Power Plant had its first phase completed in 1984, before the requirements of the legislation on environmental licensing, specifically CONAMA (Conselho Nacional do Meio Ambiente) Resolutions 01/86 and 06/87. It was only in 1998 that the environmental licensing process was regularized by the Secretariat of State for Science, Technology and Environment of the State of Pará (SECTAM) with conditions for reformulation of the development of environmental programs. Among them, the creation of Sustainable Development Plans upstream and downstream of the hydroelectric power plant as compensation and mitigation of the impacts caused in the two regions of influence.

With these demands, in 2002, processes were started for the creation of mechanisms for social participation in the region through the Regional Insertion Plan (PIRTUC) and its Management Council (CONGEP) with a coverage of seven downstream municipalities and the with participatory elaboration of the Popular Plan for Sustainable Development of Tucuruí Hydroelectric Power Plant Downstream (PPDJUS) and its Management Council (CONJUS) covering five municipalities. These mechanisms were the result of the demands of the social movements of the municipalities affected by the Tucuruí Hydroelectric Power Plant, which culminated in the implementation of the policy institutionalized by Eletronorte's Board of Directors since 2003, and the creation of

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the Regional Insertion Coordination (EIR), which adopted participatory democracy and principles of sustainable development and sharing responsibilities for activities.

According to a report drawn up by the Eletronorte Regional Integration Coordination (EIR), the actions foreseen by the PPDJUS (R $ 1.6 billion) were financed by Eletronorte in the Regional Insertion Plan of the Tucuruí Hydroelectric Downstream (PIRJUS) and defined its resources over twenty years, with R $ 27 million in the first three years. It was incumbent upon the CONJUS to define the projects to be object of PIRJUS agreements between Eletronorte, city halls and other public institutions.

This experience of participatory management, which took place on behalf of Tucuruí hydroelectric power plant in 2003, involves several ministries (MME, MMA, MDA, MC, MIN, SEAP), public agencies, teaching and research institutions (UFPA, UFRA, EMBRAPA, INCRA, MPEG, ADA, IBAMA), NGOs and has several projects and actions carried out in the areas of education, family agriculture, açaí chain, artisanal shipbuilding, culture, planning and territorial mapping.

This governance space for planning, participation and negotiation is already 13 years old and can be characterized as an important mechanism for the process of territorial development and public policy targeting, however, there is an inevitable conflict of interest between social actors, and it still has many challenges to face.

5. The governance experience in the hydroelectric plant of Belo Monte

The bidding process for the Belo Monte Hydroelectric power plant project had, as legal obligation for the winning company of the event, to commit itself to providing financial resources for the implementation of the Sustainable Regional Development Plan for Xingu – PDRSX, which included the ANEEL Auction Announcement 06/2009. Thus, in 2010, it was defined that Norte Energia should allocate the amount of R$ 500 million to finance the actions of the Xingu PDRS for a period of 20 years. To use this resource, the existence of a territorial governance was necessary.
“The Xingu PDRS was born from the idea that the implantation of large infrastructure works - paving the Transamazônica and construction of the Belo Monte Hydroelectric Power Plant - would be an opportunity to provide a region historically characterized by the fragile state presence of public policies necessary for its development, during and after the construction of these works "(PDRSX, 2010).

In almost six years of existence, the Xingu PDRS, based on a broad participatory platform with monthly meetings, provides an important learning curve for the investment decision-making process for the various dimensions of local development. This experience is of great importance as a starting point for the debate on regional development policy, especially after the construction of the work.

Today the Xingu PDRS has a coverage of 12 municipalities with a governance composed of General Coordination with a representative of the federal government, one of the state government, the president of the consortium of municipalities of Belo Monte and a representative of the civil society, Management Committee (CGDEX), which has five members of the federal government, five heads of state government, five municipal government officials and 15 representatives of civil society participate, as well as the composition of eight technical chambers that are also composed of equal representativeness between government and civil society. total of 256 representatives between incumbents and substitutes throughout the governance of the Xingu PDRS, assisted by a contracted Executive Secretary.

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The decision to allocate the PDRSX resource is collegiate, analyzed and approved by the Technical Chambers by means of Annual Statements, allowing the preparation of projects that are aligned with the actions of the PDRSX as well as the priority guidelines defined by the Technical Chambers.

Promoting action for development in a democratic society, but deeply unequal and historically disadvantaged in relation to the country's great dynamic centers, is not one of the simplest tasks. The deep asymmetries among local actors regarding their worldviews are reflected in the clash of proposals and generate a permanent tension between the focus of clear guidelines of the statements, criteria for project scoring, monitoring of approved projects, elaboration of municipal initiative projects, decentralization of resources for groups, as well as the dissemination of themes involving infrastructure development, environmental management and land regulation, promotion of sustainable productive activities, social inclusion and citizenship, monitoring of the environmental conditions of Belo Monte, traditional and indigenous peoples, health and education.

6. Conclusions

In pursuit of the assumptions of the World Bank, so that they continue to receive funding, in face of a more participatory society and legal requirements regarding socio-environmental issues, the great hydroelectric projects in the Amazon have been a challenge for entrepreneurs to learn to deal with territorial development, to the federal government for being the main decision-maker and licenser of the size of these enterprises, for the state government to inherit the gaps in public policies caused by socioeconomic impacts, for municipal management to face all socioeconomic impacts on the site, in addition to expansion of the need for public services, and especially for people directly impacted by having no alternative but to fight for recognition, respect and dignity.

One of the factors that contribute to the strengthening of human capital in all its connotations is good public governance. However, although the construction of Tucuruí and Belo Monte Hydroelectric Power Plants have been accompanied by several studies, plans and government interventions in an attempt to alert and prepare the population about the socio-environmental impacts, it is clear the need for investment in social capital and management local public to be prepared to deal with the old and new challenges.

The experiences of territorial governance in Tocantins Region and Xingu Region reinforce what the literature shows that initiatives or actions express the capacity of an organized society to manage public issues, based on the joint and cooperative involvement of social actors, economic and institutional. The negotiation spaces are a social and institutional approach and allow for collective learning, interaction and broad participation with a view to territorial development.

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Aknowledgements

This research was supported by the project AguaSociaL an FP7-PEOPLE-2013-IRSES - Marie Curie Action "International Research Staff Exchange Scheme", Grant Agreement Number 612633

European Research Council
Established by the European Commission

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES
ISSN 2345-0282 (online) http://jssidoi.org/jesi/
2018 Volume 5 Number 4 (June)
http://doi.org/10.9770/jesi.2018.5.4(1)

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