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Title of the paper

*Coordination issues in the implementation of a National Policy of
Payments for Ecosystem Services in Brazil*

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Abstract

The objective of this paper is to present and discuss the multiple dimensions of coordination problems in the effective implementation of a National PES Policy in Brazil.

The paper starts with a theoretical review of the concept of coordination and the possible strategies to achieve it. Next, we present the different dimensions that must be considered by the Federal Executive Power (public policy management unit) so that the national PES project is successful. The coordination challenges addressed in the analysis are:

(1) Coordination challenge between management units and productive agents ;(2) between management units and civil society;(3) between management units and different powers - republican coordination;(4) between management units and different federation levels;(5) within the management unit itself;(6) between management units and international institutions.

To this end, we conducted documentary research and interviews with different stakeholders, to point out the difficulties and the mechanisms that can be used to stimulate effective coordination between the levels mentioned.

Key Words: Coordination; public policy; Payments for Ecosystem Services; Brazil.

1. Introduction

Currently, few people disagree that the conservation of nature and biodiversity is imperative for society. To reach this goal, the public administrations organize the command-and-control apparatus but also formulate other policies aiming at the distribution of responsibilities among many stakeholders involved in environmental conservation. The importance of economic instruments as complimentary tools to the conventional command-and-control approach is increasing over time, including Payments for Environmental Services (PES) schemes.

There is an ongoing debate in the Brazilian Federal Congress with alternative law proposals to establish a National Policy for PES. Nevertheless, several States and Municipalities are far ahead in the implementation of PES systems, and have already created laws and programs that pay the providers of environmental services - who take conservation actions to preserve ecosystem services. These subnational PES were established as a way to protect ecosystem services such as watershed and soil protection, climate stability, and biodiversity, according to the objectives and specificities of each of these States and Municipalities. Since the Brazilian Constitution allows a considerable degree of autonomy to States and Municipalities to establish their own legislation and policies, the implementation of these PES schemes is very heterogeneous with no central harmonization.

This article aims to discuss the need for coordination in multiple dimensions of the future National Policy on Payments for Environmental Services in Brazil. The analysis is based on the law proposals currently underdiscussion in the National Congress, and the analysis consider each of the coordination dimensions as required for the successful implementation of the National PES Policy by management unit (the Federal Executive Government).

For this, the paper starts presenting the concept of Payments for Environmental Services, its context in the country and the main characteristics of the national bills that are being discussed in Congress. Then, the concept of coordination is theoretically discussed, as well as the possible strategies to reach it. It also presents the different dimensions that must be considered by the Federal Executive Government (public policy management unit) so that the National PES Policy is successful. The coordination challenges addressed in this text are:

- Coordination between management units and productive agents (coordination with the market);
- Coordination between management units and civil society (coordination with society);
- Coordination between management units and different powers - Executive, Legislative and Judiciary (republican coordination);
- Coordination between management units and different federal levels - Union, States and Municipalities (federative coordination);
- Coordination within the management unit itself (horizontal coordination);
- Coordination between management units and international institutions (international coordination).

The research was carried out based on bibliographical and documentary research and on interviews with civil servants and parliamentary advisors that could point out the difficulties and needs of the multiple dimensions of coordination required for the approval and effectiveness of the National PES Policy.

2. Payments for Environmental Services in Brazil

A PES policy is an intervention mechanism in the economic domain, deliberately constructed to alter the relative opportunity cost of environmental services over other possible allocations of the assets involved. The term "environmental service" was originally used to represent environmental functions threatened by anthropogenic actions. Among these are provisioning services, such as food; regulating services that affect the climate; cultural services that provide recreational benefits; and support services such as soil formation, and nutrient recycling (MEA, 2005, p.V).

Payments for environmental services are direct payments, established through contracts between the beneficiaries of environmental services and the owners or users of land, in exchange for adopting practices that preserve or restore the ecosystem (WUNDER, 2005). The starting point for the construction of a PES policy is the observation that conservationist actions generate additional benefits for society as a whole, and more directly for agents who benefit from the cost reduction or improvement of the quality of inputs needed by the production processes.

However, it is extremely complex to establish prices to the payments for environmental services. This requires technical, political and economic sensitivity, since PES impacts groups of paying agents and recipients: how much one pays and how much the other receives. In addition, it is necessary to decide which services will be charged or paid, who the beneficiaries will be, aligning this proposal with other environmental legislations, as well as having resources to finance PSA actions. All of these items affect the feasibility of implementing this policy.

In Brazil, there are already different subnational projects that pay for environmental services (CASTRO et al., 2016). By May 2017, ten states had laws establishing PES programs with different attributes. Among the municipalities, different

projects have been carried out, but the most discussed in the literature are the ‘Water Producers’ projects promoted by the National Water Agency, in partnership with more than 40 cities, and the Oasis Project, sponsored by the Foundation Boticário Group for Nature Protection (FGBPN), with nine experiments in progress.

It is estimated that state and municipal projects have already mobilized more than R\$ 84.4 million (approximately US\$ 28 million), and state projects only have preserved, at least, more than 76.3 thousand hectares of forests since the middle of 2000 until the beginning of 2016 (Young & Castro. 2017). However, issues related to taxation, the need for land ownership documents, and harmonization with Brazilian environmental legislation, mainly with Federal Law No. 12.651 (Forest Code), are yet waiting to be fully incorporated by all relevant legislation, with important gaps in terms of legal compatibility.

The breadth of state and municipal PES laws and projects is interesting as it can meet the specificities and demands of each locality. However, it is necessary to construct a national institutional framework to harmonize and solve some significant differences that may harm the national legal system, generating conflicts and competitions between states. Thus, in order to harmonize PES policies and projects in the country, and to meet the demand of different stakeholders (politicians, farmers and environmentalists), some Congressmen are proposing a national PES legislation. This is the case of the bill authored by Deputy Rubens Bueno (Paraná State) in the Chamber of Deputies (PL No. 312/2015), and Bill No. 276, 2013, authored by Senator Blairo Maggi (Mato Grosso State), which continues in the Senate. Both projects seek to institute the National Policy for Payment for Environmental Services and until mid-2017 they awaited appreciation of the respective legislative houses.

While Bueno's Bill in the Chamber of Deputies foresees that PES programs can promote social development and inclusion, as well as environmental preservation and recovery, Maggi's Bill in the Senate places greater value on the economic impacts on the production chain. Regardless of the focus to be chosen at the congress, it is believed that both bills have generic content and guidelines capable of supporting both national programs and regional initiatives for payments for environmental services. This coverage of the law is important not to inhibit initiatives in states where PES legislation is already in place.

On the other hand, it is more difficult to enforce very comprehensive laws. For this reason, safeguards and conditionalities are necessary to ensure the effectiveness of the law. The two bills present some similarities and relevant proposals for funding PES programs. However, Bueno's bill in the Chamber of Deputies is more complete than Maggi's bill being considered by the Senate. This is because the former makes clear the exemption of taxes for payment for environmental services, highlights the need to harmonize the National Policy of PES with national environmental legislation, releases the procurement of environmental services from the bidding processes governed by Law 8666, and beyond the economic focus is strongly based on the concern for environmental preservation with social justice.

This article, however, is not intended to defend one project over another. But rather, discuss the dimensions with which the unit managing the National Policy of PES needs to coordinate its actions so that it performs well as a national regulation. The next section will discuss the meaning of coordination, to later present each of the dimensions with which a public policy management unit needs to coordinate its activity to succeed in the enterprise of the policy.

3. Coordination of public policies

Coordination is a complex term that encompasses different definitions and is used by several areas of knowledge, including public policy analysis. However, it is important to define 'coordination' and to point out some of its characteristics.

Coordination refers to the orderly, coherent and methodical arrangement of a particular system. It can be defined as "managing interdependencies between activities" (Malone & Crowston, 1994), with interdependence being a key term, since it makes coordination necessary. This definition of coordination is interesting because it does not hide cooperation and participation, but also the conflict and competition that may exist in processes of this nature.

Thus, to study public policy coordination is necessary to ask what types of interdependence exist between activities developed to solve a public problem, and how such interdependencies and activities can be managed.

It is also important to mention two discussions related to coordination that can affect the way it is treated in the analysis of public policies:

- the number of actors involved in managing interdependent activities, and
- the need for leadership to establish coordination.

It is believed that the number of actors involved in the system does not define the need for coordination, but rather the multiple interdependent activities that are performed to achieve a goal, even when performed by a single actor. In other words, the fact that agents perform activities that have points of interdependence is what defines the need for coordination, and not the number of sectors and agencies involved in a process. Thus, a single organ may need to coordinate its different interdependent activities.

Regarding leadership, different authors consider that the search for coordination would require central control, in order to organize interdependent activities. However, Metcalfe (1996) points out that acceptance of leadership may not be effective in regimes characterized by large organizational autonomy. In this case, coordination skills in organizational networks, with teamwork, should be developed, rather than insisting on establishing central control.

Metcalfe (1996) also proposes that the assumption is that organizations develop a capacity for coordination among themselves in response to the increase of their interdependence. However, the author himself admits that a highly coordinated government is very difficult to achieve because the state in practice contains within its structure actors with very heterogeneous interests, skills and abilities (PELKONEN et al., 2009).

With regard to mechanisms and instruments capable of achieving coordination in the public sector, it is possible to mention the work of Bouckaert, Peters and Verhoest (2010). These authors define three mechanisms to achieve coordination: 'hierarchy-type' mechanisms (HTM), 'network-type' mechanisms (NTM) and 'market-type' mechanisms (MTM).

The 'hierarchy-type' mechanisms (HTM) refer to the use of authority and power to make things unopposed. For this the authority of a given agent must be legitimized by the others involved in the process, which are controlled so that their activities are in agreement with the central command. The control of the agents can be done through regulations and norms established in the bureaucratic scope or by political determinations. The instruments to obtain coordination related to these mechanisms are: top-down and unilateral strategic management; traditional input-oriented financial management; reshuffling of lines of control; etc (Bouckaert, Peters; Verhoest, 2010).

In the 'market-type' mechanisms (MTM) the exchange and competition among the actors are central to obtain results. In this case bargaining and negotiation are the basic resources of the actors to gain power in an environment of perfect competition and information. Bouckaert, Peters and Verhoest (2010, p. 41) point out that the neoclassical view of market coordination does not apply to the public sector. But they argue that market-like relationships can be created in government to improve their coordination and efficiency. The tools to obtain coordination from the MTM are: results-oriented financial management systems focused on incentives for units; regulated markets: internal markets, quasi-markets, voucher markets and external markets; etc.

The 'network-type' mechanisms (NTM) depend on the volunteer collaboration of the actors, as well as on solidary relations between them. In this case there is no hierarchy, and the actors need to develop trust among each other, as well as having common interests and goals. The NTM also requires the use of negotiations, mutual cooptation and a broad sharing of information. Bottom-up and interactive strategic management; results-oriented financial management systems oriented towards information exchange and consolidation according to policy portfolios; and systems for information exchange are coordination tools linked to the NTM (Bouckaert; Peters; Verhoest, 2010).

This article understands that these mechanisms and instruments can be used to coordinate the actions of a management unit of public policies with different dimensions so that the public policy is well succeeded. The dimensions in which coordination is needed are:

- between management units and productive agents(coordination with the market);
- between management units and civil society(coordination with society);

- between management units and other powers (republican cooperation);
- between management units, Union, States and Municipalities (federative coordination);
- within the Management Unit itself (horizontal coordination); and
- between management units and international institutions (international coordination).

In the article the management unit is the Brazilian federal executive and the public policy is the National Policy of PES. In the next section we discuss the coordination of this policy in each one of the above mentioned dimensions.

4. Dimensions of coordination of the National PES Policy

First of all, it is important to remember that the National PES Policy has not yet been approved. Instead of discussing the specific details of the two bills that deal with the subject in the National Congress, in this section we address the broad idea of a National PES Policy and the necessary characteristics it needs to present to succeed through the many coordination dimensions between the management unit and the other stakeholders involved in the implementation of national and sub-national PES projects.

It should be emphasized that each dimension has been treated separately due to analytical reasons, but this division is not empirically supported since each dimension receives influences from the others.

4.1. Coordination between management units and productive agents

The problems of coordinating a management unit with productive agents are manifested in practically all areas of environmental policy. Since its genesis, environmental policy is based on restrictions and legislation from what has been called

"command and control mechanisms" (LUSTOSA et al., 2003). That is, respect for environmental norms and rules ends up depending on the imposition of coercive mechanisms, since the benefits and costs of environmental policies are generally diffuse and therefore difficult to perceive. Thus, the question moves from the sphere of 'policy' to that of 'police'.

In Brazil, however, as the political balance tends to be unfavourable for environmental regulators, this command and control (police) power is weakened by the inability to impose sanctions and penalties on those who disregard the norms. The end result is the loss of credibility and effectiveness of the environmental policy.

Hence, PES is an economic instrument complementary to the command and control policies to achieve environmental conservation. PES-related policies involve the creation of a market, where those interested in protecting natural resources pay (in cash or incentives) to environmental service providers (WUNDER, 2005).

For PES to be effective in the country, it is necessary to establish the general rules of operation of this market. These rules include the definition of the services that can be transacted, the taxation that will be applied, the possible beneficiaries of the programs and the safeguarding of the legislation, so that there is predictability and guarantee of compliance with the contracts.

The National PES Policy itself is a coordinating instrument based on regulated markets (Bouckaert; Peters; Verhoest, 2010), which can be managed by the federal executive government to be followed by the other productive agents, and to strengthen the market of the PES.

Regardless of the existence of this national regulation, there is already in Brazil a market of buyers and sellers of environmental services with prices and established

rules. There are many uncertainties concerning operational aspects of a PES system that need to be coordinated with the productive agents (mainly farmers), including:

- a. What is the methodology to establish the payment values to compensate landowners that voluntarily accept to participate in the conservation efforts?
- b. Where the financial resources required for these payments will be obtained?
- c. How these payments will be taxed?
- d. Who is responsible for the monitoring and control the PES scheme, including the power to establish non-compliance sanctions?

Young and Bakker (2014) discussed these issues in the context of a PES program established to conserve native forests that are strategic to watershed protection. They argue that the establishment of a payment scheme combining the opportunity cost of land and indices for the quality and quantity of conservation (considering water resources, natural areas conservation, and best agricultural practices) observed in the property guarantee more efficiency in the implementation of the PES, in terms of the conservation area that can be achieved using the same financial resources. However, it is necessary to overcome the main economic obstacle that hinders coordination between the management unit and the productive sector: the private cost of implementing the policy. Although there is consensus about the importance of the environment, the productive sector reacts negatively when the restrictions are established in the private sphere and the higher are the private costs, the greater the resistance to the policy.

4.2 Coordination between management units and civil society

The coordination of the management units of a public policy with the civil society should consider mainly the target groups. These groups are composed of

subjects whose behavior is expected to change or benefit from government actions (Howlett et al., 2012).

In the case of the National PES Policy, the two bill proposals in the national legislative houses (Chamber of Deputies and Senate) differ on the establishment of the target public of the policy. The Bueno bill proposal in the Chamber defines as potential beneficiaries of the programs the providers of environmental services that can be *"natural or juridical person, public or private, family or community group that, fulfilling the eligibility criteria, maintains, recovers or improves the Environmental conditions of ecosystems that provide environmental services"* (PL No. 312/2015).

On the other hand, the Maggi bill in the Senate emphasizes that *"natural and legal persons who work in the industry, commerce, transportation, waste, civil construction, agriculture, forestry and other environmental uses are considered suppliers of environmental goods and services"* (PL n° 276, 2013). Both projects seek to prioritize the family farming, but the Senate bill omits traditional populations and indigenous peoples as potential beneficiaries of the programs.

In Maggi's bill proposal (Senate), family farmers will not be the only beneficiaries of PES programs. Through this project, large commercial owners can be the main beneficiaries of the programs, as they have the political and economic strength to influence policy makers' decisions, leaving small family farmers behind. In this case, the PES would avoid minimizing along with the reduction of environmental degradation, the poverty of family farmers, in favour of large landowners.

On the other hand, it is known that if only family farmers are the beneficiaries of PES schemes, their scope will be reduced, since one of the characteristics of family agriculture is the relatively small size of the properties. Large landowners, however, hold more land, but targeting PES to them could affect program effectiveness -

expanding the number of potential beneficiaries (as well as hectares of land) dilutes the volume of resources that can be paid to the owners: if few pay and many receive, the amount per property or hectare to be passed on by the PSA will necessarily be small.

In this way, the federal government, which will be the public policy management unit, needs to define its priorities for action to guarantee environmental conservation in private areas occupied by different social groups. It is known that any choice to be made will count on the reaction and opposition of those who will not benefit from public policies.

Howlett et al. (2012) emphasize that it is possible to deal with the resistances and pressures of target groups through agreements and negotiations between regulators and implementers with those groups to make it simpler to coordinate their actions with the interests and expectations of the beneficiaries. Thus, it would seem appropriate for the National PES Policy to create a coordination instrument that allows stakeholder participation in decisions affecting PES programs. In this case, the public policy coordination instrument "entities for collective decision-making" (Bouckaert; Peters; Verhoest, 2010) can be used, and it is already considered in Bueno's bill proposal. This bill N ° 312/2015 determines the installation of a collegiate body with the attribution to establish goals, criteria and follow up of the PES. Caution must be exercised, however, so that the decisions of this collegiate body are not co-opted by the group with more socioeconomic power to the detriment of the most vulnerable groups.

4.3. Coordination between Management Units and other powers (republican cooperation)

Republican coordination refers to the organization of democratic regimes and to the relationship between the Executive, Legislative and Judiciary branches.

Many authors point out that the very institutional design of the Brazilian political system makes it difficult to coordinate actions between the Executive and Legislative powers. For example, Palermo (2000) affirms that more than control, there is a competition between these powers because the 1988 Constitution allows both to create laws. In addition, mandates from the president and legislators are fixed and do not depend on mutual trust, reducing the bargaining power between them.

The Brazilian political system is currently described as ‘coalition presidentialism’, in which the president must enter into formal and informal agreements with politicians from different parties. In exchange for the support the president offers positions and benefits to his/her allies, however, the agreement with the party leadership does not guarantee that the cooperation of all its affiliates occurs, as well as in the regional spheres. In addition, due to these agreements, the president ends up forming extremely heterogeneous offices, making the coordination between the Executive and the Legislative difficult within his own structure (BORGES, 2005).

The Judiciary is another important actor with which the management unit needs to coordinate the formulation of public policies. This has been emphasized in the contemporary literature as ‘Judicialization’ of politics. This phenomenon would indicate the effects of the expansion of the Judiciary in the decision-making process of contemporary democracies, for domains previously reserved for other powers (Silva & Florêncio, 2011). That is, the politicians themselves, in the difficulty of making decisions, negotiating or implementing actions, have contact with the judicial area to solve their issues, using this mechanism as a strategic institutional resource of government. These actors have also encouraged citizens to seek the judiciary to secure their rights, defend minorities and control public power.

In this way, the Judiciary has been used as another political arena and in designing a public policy must be kept in mind that it will be subject to actions filed by political rivals or different members of society to enlarge, cancel or modify over there.

Environmental policy is, by excellence, carried out by the Executive Power, although there is room for it to be formulated by the Legislative Branch, as is the case with the National PES Policy. But in Brazil there are increasing conflicts between the powers.

An issue capable of illustrating the need for executive, legislative and judicial coordination within the scope of a National PES Policy refers to the acceptance or not of social agents who hold the ownership but not the formal land title in the PES programs. In Brazil there are many social groups, including family farmers, indigenous peoples, ‘quilombolas’ (descendants of escaped slaves), and other rural communities, which traditionally occupy land but without the official ownership title. If the National PES Policy states that only landed title holders are beneficiaries of the programs, both non-landed family farmers and ‘forest peoples’ will be excluded. This would be an antagonism to the goal that PES should be a socially inclusive policy that benefits these traditional communities. Such a situation may lead to legal conflicts over the possibility of transferring public resources to these social groups who render environmental services in areas that are not their legal property.

In this way, Executive, Legislative and Judiciary need to be in agreement on the guideline to be taken. Otherwise, if the legislature does not clearly define the permission for those who do not have formal land ownership participate in the PES programs, it is likely that when the Executive implements the National Policy, the Judiciary will constantly be called upon to resolve conflicts between formal and informal landowners

as to who should be provided with the resources derived from the provision of environmental services.

It is also possible to affirm that several failures of coordination of the environmental policy management units with the Judiciary Power are due to the inability of the nature protection agencies to implement the established legislation. The growing demand for environmental control actions contrasts with the lack of human and technical resources of the bodies responsible for this control in all spheres of government (Young 2013, Young et al 2012). In the incapacity, or omission in some cases, of the Executive Branch, the Judiciary has been increasingly activated by environmentalists, social groups (indigenous people, affected by the dam, etc.) or the Public Prosecutor's Office, as a last resort in defence of environmental conservation rules. In this case, the Public Prosecutor's Office acts as a 'watchdog', a role that should be fulfilled by the Executive, and conflicts over issues such as licensing and delimitation of protected areas become increasingly frequent. This means that if the Executive fails to accomplish its role of implementing the National PES Policy, the Judiciary will be called upon to enforce such a policy.

Specifically on the relationship between the Executive and the Legislative powers, it is possible to point out the political strength of agribusiness in the Legislative branch, which has generated pressure for the reformulation or reduction of the Executive's environmental policy. This results in the delay in the approval of the PES Law in the National Congress.

Since 2007 some legislators in line with part of the federal executive, mainly the managers of the Ministry of Environment, have proposed a national legislation on PES. However, so far (June 2017), the projects are stalled in Congress, with no prospects for approval. This delay reflects the divergence of interests and priorities between the

Legislative and the Ministry of Environment on this issue. It also reflects the lack of agreement on important points of the National PES Policy, such as additionality, land ownership titling, definition of potential beneficiaries and the sources of funding for the programs.

It is believed that republican coordination can be obtained mainly through negotiation and bargaining between the agents of each of the powers, in view of the constitutional norms that govern their performance in Brazilian society.

4.4. Coordination between Management Units, Union, States and Municipalities (federative coordination)

Brazil is a federalist country in which there is a sharing of sovereignty regarding decisions and responsibilities between three distinct spheres of autonomous governments: the Union, the States and the Municipalities. This allows that, despite constitutional attributions, these federative entities establish their own agendas and priorities and can administer themselves.

Federal coordination (also called vertical coordination) refers to the management of relations between the various levels of government, and for federations to occur, they must first balance the forms of cooperation and competition existing between entities (Abrucio, 2005). However, authors such as Arretche (2006) point out that federalist countries are difficult to coordinate, mainly because there is excessive competition between the different levels of government, territorial inequality and pass-through of costs from the local to the national level.

Brazilian environmental policy presupposes that the federal executive is a leader in relation to the environmental actions of other federative entities. According to Law No. 6,938, the National Environment System (SISNAMA) has the National

Environment Council (CONAMA) as the maximum regulatory body at the federal level. CONAMA is responsible for defining the general guidelines and technical parameters to be followed throughout the national territory. This same law established that subnational managers would have increased competence in practically all areas of licensing and inspection, with some exceptions previously specified, such as nuclear regulation, licensing in interstate or international offshore areas. Subnational managers have also the power to establish specific regulations, provided they are not in conflict with national standards.

However, there is great heterogeneity in the technical capacity of states and municipalities, as well as the political power of environmental regulators in the public bureaucracy. This issue is increasingly worrying because there is a clear trend towards the transfer of licensing and inspection activities to municipalities, which for the most part suffer from the lack of qualification and resources to carry out such activities. In addition, in many cases there are no clear rules as to which environmental entity is responsible for exercising particular regulation, and the confusion created thereby creates serious governance problems.

According to the National PES Policy bill proposals, the federal government would standardize programs implemented by state and municipal governments, and would also contribute additional financial resources. However, due to the delay in the approval of federal legislation, subnational entities have taken the initiative and created a series of legislation and programs to enable PES schemes in their territories. These programs, as already pointed out, are quite heterogeneous in terms of financing, target audience, form of payment and managerial architecture. However, they are very limited in their extension, far below the potential for PES in Brazil.

Some states and municipalities, for example, have failed to conduct PES programs because of the slowness or lack of interest of their legislature in approving them. As the PES can also involve public resources to be transferred to private agents, their fulfilment depends on the approval of a legal framework that authorizes their enterprise. In the absence of a national law defining such rules, each federative sphere needs to create its own regulations, which requires time and negotiations in local forums, as well as possible conflicts of jurisdiction over the responsibility of each entity. If the National PES Plan were already approved, it would be easier to expand the programs across the country.

In addition, the profusion of subnational PES standards hinders compliance with other environmental, economic, tax and public administration laws. These barriers are commonly identified as barriers to the creation of PES systems despite the existence of institutions interested in their implementation.

It is believed that an important coordination tool in this case is the establishment of systems for information exchange (Bouckaert; Peters; Verhoest, 2010), capable of systematizing and sharing the information of all existing PES programs in the country, in order to publicize their bottlenecks and successful actions.

4.5. Coordination within the management unit itself (horizontal coordination)

Horizontal coordination can be characterized as the difficulty of articulating different actors and / or processes of the same management unit in the implementation of public policies. Considering the Executive, it is not the case for network coordination, since the agencies depend on the hierarchical command of the head of the government.

However, in ‘coalition presidentialism’, the Presidency of the Republic tends to be heterogeneous with actors with different objectives in each ministry. By distributing positions to political agents with distinct interests, in exchange for their support, the president constructs a contradictory government structure in relation to the ruling party's program: agreements are not necessarily signed because of their policy objectives, but with the purpose of political benefits. It is not the ideology that approximates those involved but rather their political interests. This creates problems because of the potential conflicts brought about by an alliance that is formed because of political interests rather than common ideological views (Palermo, 2000).

In this way, Ministries associated with specific interests, such as the Ministry of the Environment and the Ministry of Agriculture, end up becoming advocates of antagonistic policies, even if they are on the same hierarchical structure within the Presidency. On the other hand, to support his/her political support, the president offers ample freedom of action and use of resources to these ministries, which end up acting as autonomous units.

In this sense, it is possible that the horizontal coordination approach is understood as a network relationship. In this approach, in the absence of a superior hierarchical structure that forces the agents to follow a certain line of action, which is characteristic of ‘coalition presidentialism’, it is necessary to move forward through the search for collaboration among agents.

The theoretical basis of the PES is the Coase Theorem (COASE, 1960), which proposes that agents voluntarily make agreements in which the user of the environmental service pays for environmental conservation when the private benefits of maintenance of environmental services exceed the value of the payment to be made. For example, it is in the interest of a rural landowner that the water sources located

upstream of the property are protected, and is therefore willing to pay upstream landowners to conserve the water sources and springs, provided that the cost of water scarcity is greater than the value needed to protect these water sources. A National PES Policy should ensure the necessary flexibility for these voluntary agreements to be established.

In this way, it is assumed that the PES itself is able to foster coordination among agents because it tends to relate the interest of economic gains to environmental conservation. However, there are conflicts between the Ministry of the Environment and the Ministry of Agriculture on the subject, as well as between agribusiness advocates and environmentalists. The bill proposals at the National Congress reflect these antagonisms. As already pointed out, while the Bueno's bill that is being negotiated in the Chamber of Deputies (PL No. 312/2015) has bias towards environmental conservation with social development and inclusion, the Maggi's bill in the Senate (PL No. 276 / 2013) seeks to stimulate sustainable development by encouraging members of production chains to adopt actions to produce environmental goods and services.

In other words, the need for horizontal coordination reflects the difficulties of reconciling the interests of production and environmental sustainability in the current capitalist paradigm of production, as already discussed in the subsection dedicated to coordination with the market. The perspective that land clearing must be accepted in order to maximize agricultural production is transferred to the government by the pressures of landowners, and is particularly dominant in the Ministry of Agriculture. However, this view is conflictive with the 'Green Economy' paradigm, dominant in the Ministry of Environment, which points out ways to introduce economic instruments of environmental management (polluter/user-pays and protector-receiver principles) in

order to establish new ways of coordination with the productive sector through direct policy interventions to correct market failures (Young, 2013).

Thus, as pointed out previously, the PES proposal could be considered a market-type coordinating mechanism intending to conciliate the interests of the conflictive stakeholders (environmentalists, small farmers, traditional communities, commercial landowners, agribusiness industry, etc.). The role of the Federal Executive is to guarantee a fair balance between these agents, especially to protect the most vulnerable social groups.

4.6. Coordination between Management Units and International Institutions

It is necessary to establish paths towards the coordination between domestic and international policies and actors. With globalization, this demand became urgent, not only involving economic phenomena, but also processes that obey political decisions, mediated by the institutions and elites responsible for local governments, as well as by the asymmetric relations of power between the powers (DINIZ, 2004).

According to Diniz (2004), national governments cannot be treated as passive victims, without responsibility for the mistakes and the correct policies. They must manage with greater or less autonomy the insertion of the country in the international system, which does not require only the technical capacity of the elites. It also depends on decisions more or less committed to sovereignty and strengthening the bargaining power of national governments. These actions require a high capacity of state management, which would enable it to define and implement strategic policies geared to the national interest, which would dialogue with international institutions and regulations (DINIZ, 2004).

In the context of environmental issues, the perception that problems are global and interdependent (eg. deforestation causes loss of biodiversity and worsening climate change) led to major international agreements, including the United Nations Framework Convention on Climate Change (UNFCCC, better known as the Climate Convention) and the Convention on Biological Diversity (CBD), both signed in 1992 in Rio de Janeiro. The aim was to establish consensus-based norms and objectives among all countries, so as to prevail in the interest of preserving global commons. The implementation of such agreements requires the validation of protocols established with consensus among all signatory countries, but voting rules make it extremely difficult to validate such agreements. For economic, geopolitical, or even cultural reasons, the Parties seek to impose the themes of their specific agendas, which in some cases mean not ratifying or emptying environmental agreements that are contrary to their domestic interests.

The Federal Executive is Brazil's legitimate representative in the drafting and signing of Global Conventions on environmental issues, including the commitment to the Paris Agreement to reduce emissions and eliminate illegal deforestation by 2030. But the Federal Government's participation in deforestation control is reducing over time, while most of the repression has been transferred to the state and municipal authorities (COMPLEMENTARY LAW No. 140/2011).

Likewise, the Federal Executive has set goals for the creation and maintenance of conservation areas in accordance with the Aichi Targets and the Nagoya Protocol. However, such objectives can only be achieved if there is a significant effort to expand or maintain conservation units under the control of state governments, as well as in accordance with the interests of the federal legislature – in May 2017, the Brazilian Federal Congress approved a law that has reduced significantly the size of four protected areas, going against the commitments with the CBD and UNFCCC (Bragança,

2017). On the other hand, in June 2017 the Judiciary has demanded the Federal Government create new 11 protected areas throughout the Amazon (Fonseca, 2017).

In this way, the fulfilment of international commitments by Brazil depends on republican and federative coordination among the different public entities. On the other hand, the international coordination can result in very advantageous agreements for Brazil since it is arguably the most biodiverse country in the world. The use of coordination tools in international environmental agreements could also favour the other Latin American countries, in their demand to raise resources to preserve its biological diversity.

Specifically, the establishment of a market for carbon credits associated with forest conservation would be vital for obtaining financial resources, especially for the large forest areas of the Amazon, Cerrado and Pantanal. For this, however, it is necessary that the negotiating position of the federal executive becomes more combative in favour of instruments such as credits for reducing emissions from deforestation and forest degradation, including the conservation of forest carbon stocks and sustainable management of forests (REDD +). In contrast to the lack of initiative of the federal executive in supporting these markets, some State governments (Amazonas and Acre) sought to participate in the negotiation of major international agreements. These states have received international funding to their own REDD+ programs, linked to deforestation reduction and forest conservation, which contribute to reduce the emissions of greenhouse gases emissions.

However, they received severe criticism from the Brazilian Federal diplomacy, which has as a guiding principle never to involve negotiations related to the Amazonian territory in international agreements. As a consequence of its immobility and passivity in the international debate on REDD+, Brazil received very little financial resources for

the reduction of deforestation in the Amazon between 2005 and 2010, although it was one of the most important global actions in terms of reducing greenhouse gas emissions in the period. Changing this position is important but a complex task, since it requires federative coordination of interests at the domestic arena in order to reshape its position in the international for a debating this issue.

5. Final considerations

This article discussed the need for multiple dimensions of coordination for a successful implementation of a future National Policy on Payments for Environmental Services in Brazil. Based on the proposals that are in debate in the National Congress, it showed the need to coordinate the management unit of the policy (the federal executive) with the productive agents; with civil society; with the Legislative and Judiciary; with the states and municipalities; with international institutions and within the management unit itself. It is argued that the accomplishment of the coordination in these multiple dimensions favours the effectiveness of the implementation of the policy.

Firstly, the institutional structure under which the state is constituted must be considered in the discussion about the coordination of public policies. It is also necessary to know the management unit of public policy to put it in perspective with others interested in implementing it. It is also believed that the dimensions that influence the effectiveness of policy implementation are directly interrelated, so that by altering the management unit's relationship with a dimension, it is possible to change all public policy performance.

A future research objective is to deepen the discussion about the strategies that are capable of coordinating public policies. To this end, research on methods, procedures, awards, sanctions and punishment structures must be carried out so that it is

possible to manage interdependent activities with a view to achieving a single objective, differentiating strategies for when there is a single actor involved, a network of actors without structured leadership, or when there is a single leadership.

The starting point of the case study discussion is the absence of a National PES Policy in the country, and the analysis of two distinct proposals to establish policy guidelines to fulfil this gap, one (PL 312/2015) focused on environmental preservation with social justice, and the other (PL nº 276/2013) focused on fostering productive chains capable of providing environmental services. Independently of their differences, both proposals are far from being approved due to their incapability to answer the coordination challenges in all of the dimensions analysed in this paper. The situation has worsened due to the severe crisis in institutional, political and economic terms, but even before that the delay in the approval of a National PES Law reflects the structural nature of the problems underlying the coordination challenges. Recent setbacks in the environmental policy, including the reduction of protected areas, the revitalization of deforestation, the cutback in public budgets and the dismantling of environmental protection organs show that an effective solution for a National PES Policy is even further away to be achieved.

Environmental policies face considerable resistance in their implementation since they are generally seen as impediments to economic growth. In this way, *realpolitik* tries to use the common shortcomings of coordination as an excuse to ignore the growing popular demand for improved management of natural resources. PES can be a conciliatory instrument if properly established since it is intended to generate win-win solutions for both environmental conservation and economic activities. But it requires institutional and political circumstances that are unfortunately distant from the current Brazilian reality.

6. References

ABRUCIO, Fernando Luiz.(2005) A coordenação federativa no Brasil: a experiência do período FHC e os desafios do governo Lula. Rev. Sociol. Polit., Curitiba , n. 24, June 2005 . Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-44782005000100005&lng=en&nrm=iso>.

ANTERO, Samuel A.. Articulação de políticas públicas a partir dos fóruns de competitividade setoriais: a experiência recente da cadeia produtiva têxtil e de confecções. Rev. Adm. Pública, Rio de Janeiro , v. 40, n. 1, Feb. 2006.

ARRETCHE, Marta. (2006) Federalismo e Políticas Sociais no Brasil: Problemas de Coordenação e Autonomia. In: SARAVIA, Enrique e FERRAREZI, Elisabete. Políticas públicas; coletânea. Brasília: ENAP.

BORGES, Arleth Santos (2005). Papel do Poder Legislativo na Produção de Políticas Públicas no Maranhão. II Jornada Internacional de Políticas Públicas. São Luís – MA, 23 a 26 de agosto.

BOUCKAERT, Geert; PETERS, B. Guy; VERHOEST, Koen (2010). The Coordination of Public Sector Organizations Shifting Patterns of Public Management. Palgrave Macmillan: Houndmills, Basingstoke.

BRASIL. PL N° 312/2015. Institui a Política Nacional de Pagamento por Serviços Ambientais e dá outras providências. Disponível em: http://www.camara.gov.br/proposicoesWeb/prop_mostrarintegra?codteor=1299830&filename=PL+312/2015.

BRASIL. PL nº 276, de 2013. Institui a Política Nacional de Pagamento por Serviços Ambientais. Disponível em: <http://legis.senado.leg.br/diarios/BuscaDiario?tipDiario=1&datDiario=05/07/2013&paginaDireta=43184>. Acesso em mar. 2016.

BRASIL. LEI COMPLEMENTAR N° 140, de 8 de dezembro de 2011. Disponível em: http://www.planalto.gov.br/ccivil_03/leis/LCP/Lcp140.htm

BRAGANÇA, Daniele. (2017) Câmara aprova MP que recortou a Floresta Nacional Jamanxim. Associação O Eco. quarta-feira, 17 maio. Disponível em: <http://www.oeco.org.br/noticias/camara-aprova-mp-que-recortou-a-floresta-nacional-jamanxim/>

CASTRO, Biancca Scarpeline de; YOUNG, Carlos Eduardo Frickmann; PEREIRA, Vanessa de Souza. (2016). An Overview of State-level Initiatives of Payment for Ecosystem Services in Brazil. In: Namirembe, Sara; Leimona, Beria; Noordwijk, Meine van; Minang, Peter. Co-investment in ecosystem services: global lessons from payment and incentive schemes. World Agroforestry Centre (ICRAF). CHAPTER 37.

COASE, R. H.(1960). The problem of social cost. The Journal of Law and Economics, Vol. III, 1960, pp. 1–44.

DINIZ, E. (2004). Globalização, Reformas Econômicas e Elites Empresariais, Rio de Janeiro: FGV, (2ª edição).

FONSECA, Vandr . (2017) Justi a manda ICMBio implementar UCs ao longo da BR-319. Associa  o O Eco. domingo, 04 junho. Dispon vel em: <http://www.oeco.org.br/noticias/justica-manda-icmbio-implementar-ucs-ao-longo-da-br-319/>

HOWLETT., Michael; PERL, Anthony; RAMESH, M.(2012) Pol tica P blica: seus ciclos e subsistemas. Uma abordagem integral. Elsevier. 3 . Edi   o,

KOSHIMA, Karin Satsuki Lima. (2006) Coopera  o internacional e pol ticas p blicas: a influ ncia do POMMAR / USAID na agenda p blica brasileira de enfrentamento   viol ncia sexual contra crian as e adolescentes. Disserta  o (mestrado profissional) – Universidade Federal da Bahia. Escola de Administra   o, 2006.

LOTTA, (2012) Gabriela S. Coordena  o, coopera  o e pol ticas p blicas: organizando percep   es e conceitos sobre um tema caro   implementa   o. In: FARIA, Carlos Aur lio Pimenta de (org.). Implementa   o de politicas publicas. Editora PUC Minas.

LUSTOSA, Maria Cec lia Junqueira; C NEPA, Eug nio M.; YOUNG, Carlos EF. (2003).Pol tica ambiental. Economia do meio ambiente: teoria e pr tica. Rio de Janeiro: Elsevier, p. 135-153,

MALONE, Thomas W.; CROWSTON, Kevin. (1994). The Interdisciplinary Study of Coordination. ACM Computing Surveys, Vol. 26, No. 1, March

MALONE, Thomas W.; CROWSTON, Kevin. (1990). What is Coordination Theory and How Can It Help Design Cooperative Work Systems. CSCW 90 Proceedings. Conference on Computer Supported Cooperative Work, Los Angeles, California, October

MEA – MILLENNIUM ECOSYSTEM ASSESSMENT. (2005) Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

MELIN, Ulf, AXELSSON, Karin. (2005). Understanding organizational coordination and information systems – mintzberg’s coordination mechanisms revisited and evaluated. In European Conference on Information Systems 2005. Regensburg, Germany.

METCALFE, L. (1996) Building Capacities for Integration: The Future Role of the Commission. Lecture given at the Schuman-Seminar: 'Maastricht in Maastricht, the Treaty Revisited', held at the Provincial Government House, Maastricht (NL) on 13 May

MILNER, Helen. (1992) International theories of cooperation Among Nations: Strengths and weaknesses. World Politics. Volume 44, Issue 03, Abril, pp 466-496.

O'NEILL, Kate; BALSIGER, Jorg; VANDEVEER, Stacy D. (2004) Actors, Norms, and Impact: Recent International Cooperation Theory and the influence of the agent-structure debate. Annu. Rev. Polit. Sci. Vol 07: 140-175. June.

PALERMO, Vicente.(2000) Como se governa o Brasil? O debate sobre instituições políticas e gestão de governo. Dados [online]. vol.43, n.3, pp. 521-557. ISSN 0011-5258.

PELKONEN, A.; TERÄVÄINEN, T.; WALTARI, S.T. (2009) Assessing Policy coordination capacity: higher education, science, and technology policies in finland. Education in Finland. Taipei: National Institute of educational Resources and Research (NIOERAR).

SILVA, Jeovan Assis da e FLORÊNCIO, Pedro de Abreu e Lima. (2011). Políticas Judiciárias no Brasil: o Judiciário como autor de políticas públicas. Revista do Serviço Público Brasília 62 (2): 119-136 Abr/Jun.

WUNDER, S. (2005) Payments for Environmental Services: Some Nuts and Bolts. **CIFOR Occasional Paper N° 42**, Center for International Forestry Research, Jakarta..

YOUNG, Carlos Eduardo Frickmann; CASTRO, Biancca Scarpeline de (2017). Legislação e Financiamento de Pagamentos por Serviços Ambientais no Brasil. Editora Synergia: Rio de Janeiro-RJ.

YOUNG, C.E.F. (2013) Green economy policies in Brazil : challenges and opportunities. Revista del CESLA, núm. 16, , pp. 261-277 (Uniwersytet Warszawski)

YOUNG, CEF; POSSAS, E; PEREIRA, PJC; AGUIAR, C. É Pau, É Pedra: Custo Econômico Dos Desastres Climáticos no Estado do Rio De Janeiro. Trabalho apresentado no X Encontro da Sociedade Brasileira de Economia Ecológica (EcoEco), Vitória, Setembro 2013.

YOUNG, C. E. F.; ROCHA, E. R. P.; BAKKER, L.; SANTORO, A. F.(2012) How green is my budget? Public environmental expenditures in Brazil (2002-2010). In: XII Biennial Conference of the International Society for Ecological Economics (ISEE), Rio de Janeiro.