Biodiversity Governance in Developing Countries: Brazil 1990-2010

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ABSTRACT:
This article approaches the evolution of various modes of environmental governance in developing countries by analyzing the Brazilian policy towards biological diversity between 1990 and 2010. Governance is broadly defined as an ensemble of systems of coordination and control among a variety of players with different purposes and objectives. This study draws on previous works on governance in the European Union (EU) that identify four main types of relationships between various political actors. Such relationships may be classified as follows: a) *statism*, characterized by a hierarchical relationship among political actors; b) *pluralism*, where a wider variety of private actors is observed; c) *corporatism*, where the state acts together with privileged private actors, and d) *networks* formed by public and private actors interacting over time. A historical-institutionalist approach coupled with process-tracing methodology allows for the

Introduction

The impact of growing economic activity on the environment has been observed and studied since the end of the 19th century. Over the last 20 years, however, such relationship has changed remarkably due to changes in the international system and in the capacity of the environment to absorb the impact of human activities. The depletion of natural resources, extinction, desertification and the effects of pollution on several ecosystems have become evident, which raised concern among societal actors. The impact of environmental problems on the economy, trade, health and security created a demand for regulation in various political spheres.

In June 2012, leaders from developing and developed states, along with numerous representatives from the private sector, epistemic communities, NGOs and other social movements came together to discuss strategies to achieve sustainable modes of production and consumption throughout the world. Although the United Nations Conference on Sustainable Development (UNCSD), or 'Rio+20', may have not met the ambitious expectations of large part of the participants, there was consensus regarding the importance of developing cooperative mechanisms and coordinating environmental policies in order to contain the loss of biological diversity ('biodiversity') worldwide, with particular attention to the promotion of sustained, inclusive and equitable global growth.

Since the United Nations Conference on Environment and Development (UNCED) in 1992, developing countries have played an increasingly important role in the establishment and implementation of multilateral environmental agreements (MEAs). Nevertheless, the difficulties to reconcile economic growth, development and environmental concerns have led these countries to adopt ambiguous positions in the negotiation of various environmental agreements. Of particular interest is the evolution of institutions that seek to regulate the access to environmental services whose (present and future) value cannot be expressed by market prices alone (Gowdy, 1994, 1997). In that sense, the Convention on Biological Diversity (CBD) can be regarded as a turning point in the approach to these novel issues.

This article focuses on institutional responses – rules, procedures and organizations devised over time to address collective action problems – to the emergence of complex environmental problems. It seeks to investigate the domestic and the international factors that shaped the Brazil's positions vis-à-vis international agreements on the protection of biodiversity from 1992 to 2010. Of particular interest are the views of the Brazilian Ministry of Environment (MMA), and the role it has played in the definition of such strategy. Under which conditions have such views prevailed?

To what extent, and by which means have Brazilian views on governance affected the relations with northern countries, more specifically with the EU? This article tackles these questions through a historical-institutionalist perspective. Data stem from reports of conferences' preparatory meetings, press records and interviews with Brazilian officials involved in international negotiations processes.

This paper is organized as follows: first, a review of the literature on modes of governance is provided and four main types of relationships used in this study are explained. The following section offers an overview of biodiversity as a political agenda and its particularities, namely the lack of consensus about scientific data to orient decision-making and negotiation processes. The remainder of the article examines the evolution of biodiversity policy in the Brazilian political agenda. Especial attention is given to the relations between political actors, and the institutional and policy outcomes of such interactions over time. The final section concludes and indicates possibilities for further research.

Governance

Governance can be defined as a dynamic system where political players with various motivations, interests and objectives interact with each other and with governmental bodies in order to devise institutions (rules and structures) that help them meet these preferences. (Pierre, 2000). It encompasses 'every mode of political steering involving public and private actors, including traditional modes of government and different types of political steering from hierarchical imposition to sheer information measures' (Héritier, 2002, 185). Regardless the definition, the term governance has been associated to changes in the nature of the state, its relation with other political actors, its capacity to provide public goods and the necessity to adapt to changing context domestic as well as international contexts. The emergence of various modes of governance has caught the attention of European scholars interested in explaining EU integration. Research in this area has been driven by a number of 'developments such as enlargement and concerns about the economic competitiveness implications of using older modes such as regulation' (Schout and Jordan, 2008, 961). In the EU, the desire to diversify the procedures and the actors involved in decision-making processes is linked to the need to overcome deadlocks that emerge between Member States along the integration process, to reduce the so-called democratic deficit in the EU and to devise more flexible policy implementation mechanisms capable of engaging various stakeholders and governmental instances.

comparison, over time, of critical trends in biodiversity governance clustered around three dimensions: actors (public-private dimension); institutions (rules and structures, decision making), and policy outcomes. By adapting this typology to the Brazilian case, this article seeks to shed light on the means by which public and private actors from developing countries participate in the formulation and negotiation of policies to contain biodiversity loss.

KEY-WORDS: Biodiversity policy, Brazil, historical institutionalism, governance

From an academic standpoint, the dichotomy posed by intergovernmentalist and supranationalist views on regional integration dichotomy proved limited to deal with the growing complexity of European polity system. Further discussions around liberal intergovernmentalist approaches (Moravcsik, 1998) and multi-level governance (Kohler-Koch, 1999) paid a significant contribution to EU studies, therefore providing conditions for a thorough and systematic analysis of the challenges posed by the integration processes. At the same time, scholars less focused on this ontological debate engaged in a process of identification of major trends in EU governance. Governance studies narrowed this theoretical and methodological gap by providing researchers with useful conceptualizations of 'institutional relationships which often tend to be negotiated arrangements rather than constitutionally defined, and where policies are implemented more on the basis of agreement and compliance than enforcement' (Pierre, 2000, 9).

Traditionally associated with control, steering and hierarchic relations, governance has become increasingly multi-layered and cross-sectoral. The emergence of various forms of governance are associated to shifting conceptions of citizenship from political representation to more active or direct participation, most notably at the local level. Network governance moves beyond statism and corporatist bargaining to more dispersed, flexible and, in some cases, transparent modes of agenda-setting, policy-making and implementation. The political avenues opened to public participation, however, do not necessarily increase equity between public, private and civil society actors. The concern raised by the relationship between representative democracy and governance networks has resulted in an important body of literature (Klijn and Skelcher, 2008).

The variation regarding the constellation of actors and the role they play within specific contexts suggests the research potential for comparative and process-tracing methodologies. Thus, the analytical framework developed by EU scholars should be transposable to other settings. This is one of the aims of this article, which draws on four modes of governance in order to compare different moments of Brazilian biodiversity policy.

Modes of governance: statism, pluralism, corporatism and networks

In statist circumstances, the formulation, implementation, monitoring and enforcement of societal rules occurs directly or indirectly through the state. Private actors play a secondary role and local governments have no significant autonomy

regarding national policy questions because of states' 'supreme, comprehensive, unqualified and exclusive rule over its territorial jurisdiction' (Scholte, 2004, 6). Statist analyses focus on the extent to which the state is capable of developing political and institutional capacities to steer other political actors (Peters, 1996). This article draws on a broader the concept of statism in order to encompass hierarchical relationships between the state and political units such as local governments, corporations, *quangos* and the citizens. In democratic systems, institutional rules (voting, for example) ensure that these actors are represented – albeit unevenly – in governmental spheres. However, such relations are fundamentally of top-down character, as the other actors are required to adapt to state's regulations, rather than engaging in a collective process of policy formulation.

Pluralist systems comprise multiple, voluntary, competitive, non-hierarchically ordered, and self-determined actors which are not necessarily recognized, supported or fully controlled by the State. Various interest groups may seek to devise mechanisms to regulate, for instance, the activities of global companies, finance and ecology, and to influence politicians and governmental institutions that are critical in specific decision-making processes. Pluralist modes of governance could be compared to a free market, where interest groups have similar access and influence on governmental instances (Bomberg, 1998). In *corporatist* systems, a few privileged interest groups are incorporated in public decision-making as decisive co-actors (Falkner, 2000). Private interests have privileged channels to political arenas, decision-making and implementation.

In all three modes aforementioned, actors compete to have their political positions translated into legislation and policy measures. *Network governance*, by contrast, is characterized by co-operation among all interested actors and by mutual learning processes, as actors interact repetitively over time (Kohler-Koch, 1999). Falkner accurately summarizes the network perspective: 'hierarchy and subordination give way to an interchange on a more equal footing aimed at joint problem-solving that will spread in the multi-level system'. These interactions, he claims, suggest a more 'cooperative process than self-interested lobbying of many individual private groups according to the pluralist ideal-type' (Falkner, 2000, 98).

In the 21st century, the proliferation of multiple arenas of political interaction and the strengthening of sub-national, private and individual actors that has followed the processes of liberalization and globalization in the economic and

9

social realms have rendered governance more diffused and the strictly statist model, virtually obsolete. On the top of that, policy instruments have also developed, and include not only binding provisions and sanctions, but also, soft law based on voluntarism and coercion, non-institutionalized interactions and procedural regulation (such as environmental impact assessments) in addition to the definition of material standards (Treib, Bähr and Falkner, 2005).

In areas of limited statehood such as corporate social and environmental responsibility, the provision of collective goods through non-hierarchical coordination, as well as the participation of non-state actors can be 'both effective and legitimate' (Börzel and Risse: 2010, 128). By contrast, despite the transformation of governance processes and structures into some sort of 'new multilateralism' (Schechter, 1999), statism by no means entails the end of the state itself, as will be observed in Brazil's biodiversity policy from 1990 to 2010.

Theoretical and methodological considerations

Comprising a variety of theories that adopt rational choice, sociological, or historical perspectives, institutionalism's various strands share a common claim that institutions *matter* because they affect political behavior and policy outcomes by regulating social practices, distributing collective gains, reducing information asymmetries, and promoting trust over time. Historical institutionalism (HI) focuses on the mechanisms and processes through which mutual interests emerge and evolve over time, as well as on the means by which shared preferences may favor the articulation of certain groups over others. Whereas the rational choice approach regard institutions as coordinating mechanisms that sustain a particular equilibrium among individual actors, HI see institutions as path-dependent: they are the 'legacy of concrete historical processes' along which political choices are continuously being made (Thelen, 1999, 369).

This article seeks to identify how Brazilian policy regarding biodiversity has evolved over time, and which actors and institutional choices have shaped this policy area from 1990 to 2010. This time frame was chosen due to the emergence of environmental affairs in world politics, and also because of Brazil's increasing participation in multilateral negotiations. The evolution of biodiversity policy is analyzed along policy, politics and polity dimensions, following Treib, Bähr and Falkner (2005).

TABLE 1. Analytical criteria

Dimensions	**Policy**	Legally-binding provisions vs. soft Law Rigid vs. flexible approach to implementation Sanctions Material vs. procedural regulation
	Politics	Diversity and number of stakeholders Participation and *de facto* decision-making power of public or private actors (*actorness* of stakeholders)
	Polity	Hierarchy (top-down ordering) vs. pluralism Central vs. diffuse authority Institutionalized vs. informal interactions Degree of corporatism (privileged groups)

Based on Treib, Bähr and Gerda, 2005

Biological diversity – main aspects

Coined in 1980 by the biologist Thomas Lovejoy, the term *biological diversity* (biodiversity) has no single standard definition. In broad terms, it is the 'variation of life at all levels of biological organization or, as put by the CBD: it is the variability among living organisms from 'terrestrial, marine and other ecosystems, and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems'.[1] Such variability is responsible for numerous environmental services such as regulation of chemical composition of the atmosphere, food production, supply of raw materials, water provision, nutrients' recycling, biological control of populations, potential use of genetic resources for food or medicine production, leisure activities, and so on.

Another crucial function of biodiversity is to render the environment more resilient, that is, capable of absorbing external shocks caused by human activities or natural disasters (Myers, 1996). Concern raised – and disputed – by scientists throughout the world is that changes in environmental conditions might have a negative impact on the environmental services and insurance effect that biodiversity provides, which would in turn engender social and economic implications. Notwithstanding the threat posed by biodiversity loss, information about the consequences of this phenomenon is often too complex and non-consensual to be translated into policy measures and effectively implemented. This aspect is crucial to understand the negotiation of biodiversity agreements and the development of national plans.

The majority of the works on decision-making deals with situations where actors can estimate the probabilities of a set of events occurring. By contrast, there is no consensus normative or positive theory of behavior regarding situations where these probabilities are unknown. In this case the traditional cost-benefit analysis is severely hampered because scientists cannot provide policy-makers with a set of probabilities over possible outcomes. In broad agreements that engender long term commitments such as the CBD, negotiating parties try to set minimum common denominators along the negotiation process, thereby defining the basis for subsequent rounds. Such negotiation strategy is particularly frequent when players are not sure about the preferences of other actors (how *much* biodiversity are stakeholders willing or able to preserve?) or when negotiating positions may change due to technological advances that reduce uncertainty about specific attributed of a certain agenda. This allows players to keep options open for future interactions, and to reduce the political cost of not reaching any agreement and remaining in the *status quo*.

Historical background – Brazilian environmental policy

Historically, Brazilian views on environmental protection – including biodiversity policy – are part of a larger debate involving national sovereignty over natural resources and the right to promote development and economic growth as a means to reduce poverty and inequality. Three approaches to environmental affairs are observed: a corrective approach, dominant over the 1970s; preventive approach in the 1980s, and current efforts to adopt more integrative approaches, thereby bringing together the various stakeholders – biotechnology companies, land owners, indigenous peoples, epistemic communities, to name a few – involved in specific environmental agendas.

In the 1970s, economic growth and self-sufficiency in strategic sectors, most notably energy, were the primordial goals of Brazilian public policy. To the military establishment, the integration of remote regions of the country was of critical importance to the accomplishment of Brazil's national interest for both economic and security reasons. Guided by the principle that poverty was the worst type of pollution, development policy was carried out through massive public investment in structural projects and ventures such as the Jari project, the Trans-Amazonic highway, Itaipu hydroelectric plant and the mastery of the nuclear fuel cycle, to name a few initiatives carried out during the economic *Milagre*.

Sovereignty over vast primary resources (land, minerals, forests, oil) prevailed over initiatives of environmental preservation, and international concerns about an eventual collapse of such resources was interpreted as an attempt to impede national development. Such view, which was sustained by the Brazilian delegation during the UN Conference on Human Environment in Stockholm, 1972, still reverberates (to a minor extent) in the present political discourse. Notwithstanding, concerns with the impact of large structural projects and extensive agriculture on the environment, together with the need to improve Brazil's standing after the conference of Stockholm motivated the creation of the Especial Secretary for the Environment (SEMA). Established in 1973 under the Ministry of Home Affairs ('Casa Civil'), SEMA's main tasks were to formulate control measures in response to environmental damages, and to develop programs of environmental education. At that time two main environmental actors are identified: environmental associations and state-driven agencies, both concerned with agricultural and urban-industrial pollution, and also with the preservation of specific natural ecosystems (Viola and Leis, 1995).

In the 1980s Brazilian environmental policy went through deep changes. In 1981, President João Figueiredo – the last chief of state of the military period – created the National Council for the Environment (CONAMA). Attached to the presidential cabinet, CONAMA was formed by representatives of several ministries, officials from policy-specific sectors of the national administration, and representatives from federal states and municipalities. CONAMA laid down principles, instruments and institutions 'to ensure, within the country, the necessary conditions for the socio-economic development, national security interests and the protection of the dignity of human life'.[2] External factors such as the nuclear accident in the Chernobyl plant in Ukraine in 1986 and the publication of Commission Brundtland report ('Our Common Future') played a role, but the democratization process and the institutional changes that came along with the new regime were also of critical importance. Under President José Sarney's administration (1985-1989), various public bodies were restructured and regrouped within one single federal body the Brazilian Institute for the Environment and Natural Resources (IBAMA)[3], the executive branch of the National Environmental System (SISNAMA). As put by Vieira, the aim of a 'better articulation of the local, provincial and national management spaces, the emphasis was set on the design of decentralized, participative and scientifically well informed management strategies' (Vieira, 1998, 14). The institutional development observed in Brazil was possible because of the

need to establish structures to stabilize the democratization process and encourage political participation of civil society. Such transformation was catalyzed by the creation of the Brazilian Green Party in 1986 – although only recently the party has been able to expand its electorate beyond grassroots movements and upper-middle social classes. Another factor that gave visibility to the environmental agenda was the need to respond to environmental disasters such as Goiania's radiological accident and floods in Brazil's South-eastern region.

During the meetings of the Constituency Congress in 1987-1988, a Green Parliamentary Front – where social democrat and labor parties (PSDB and PT, respectively) were the more active participants – was created to incorporate a chapter focusing the theme of environmental security in the new Constitution. Nevertheless, conflicting ideologies, coupled with the non-participation of other social movements resulted in the failure of such initiative (Viola, 1988). Despite important institutional developments, this period is marked by a strongly statist mode of governance, with limited participation of the non-governmental sector. Less corporatism is observed (with the exception of land owners and contractors), but the shift in Brazilian environmental policy is also due to a severe economic crisis marked by hyperinflation and recession that interrupted the flux of resources to finance most part of big infra-structural projects.

Preparatory work for the Convention on Biological Diversity

The negotiations around a convention on biological diversity began in 1987, when the UNEP established working groups on biodiversity and biotechnology. Such groups lead to the Intergovernmental Negotiating Committee for a Framework Convention on Biological Diversity (INC). The agenda consisted of four types of issues: fundamental principles, financial mechanisms, property rights and international politics. The convention proposal was supported by the USA, USSR/CIS, the Netherlands and Scandinavian countries. However, along the five negotiation meetings a clear division was established between countries that sustained that biodiversity was common heritage of mankind, and those who defended the prevalence of national sovereignty over natural resources, like Brazil.[4] Thus, research products and patents on gene stocks were treated as private goods by the GATT, which affected the establishment of provisions related to financial assistance and technology transfer. There was also disagreement concerning global listings of key species and biodiversity hot spots; in this aspect the U.S., Canada,

India, and Brazil opposed Japan, Australia, France, and several African countries. These divergences prevented the INC from making significant headway along the UNCED preparatory sessions. A general agreement was finally reach shortly before the conference, without the adherence of the USA.

UNCED 1992

The position advanced by the Brazilian government at UNCED was based on three central principles: first, global environmental problems should be given priority by the international community. Second, few countries had so many biodiversity *hot spots* that ought to be classified, profited, and protected. Since Brazil's environmental problems are also global problems, Brazilian participation should be integral part of the multilateral efforts to be carried out to find solutions to planetary problems regarding the environment (Azambuja, 1992). Third, states that have historical responsibility over environmental problems – industrialized states – should have more ambitious and binding environmental targets than developing countries.[5] Another three aspects determined the positions put forth by Brazil in the preparatory meetings and during the conference: first, there was a strong concern with ensuring some degree of consensus; second, as a recent democracy, Brazil wanted to send a sign to the international community that the country could give a contribution to address those new global challenges. The third aspect refers to the ambiguous (or versatile, to certain analysts) role Brazil aimed at playing: despite the country's diplomatic articulation with other developing nations and with the Group of 77, it was essential for Brazil to be taken into account by developed countries as a key player in environmental matters.

The conference brought together world leaders and received extensive media coverage, thereby increasing public awareness in Brazil and overseas of environmental problems and the need for internationally coordinated actions to be implemented at the local level. By contrast, while creating an interface with civil society, Brazilian authorities missed the opportunity to launch the bases of a deep reflection concerning the country's responsibilities to pursue a comprehensive strategy of sustainable development. The need to establish global regimes to deal with biodiversity and property rights coexisted with the north-south cleavages and developing countries' claims on the full right to development. The tension between these two forces prevented further discussions in the domestic realm about the Brazil's responsibility regards to environmental protection – and the

15

adjustments necessary to an eventual migration towards a greener economy – from taking place at that time.

The Brazilian position in UNCED was inserted in a highly hierarchical governance structure and public actors conducted the political-diplomatic process. Environmental governance followed a statist model with some components of cosmopolitan-liberalism (Viola, 1997). The liberalization process started by President Collor de Mello (1990-1992) and the increasing visibility of environmental problems worldwide provided an opportunity for the participation of NGOs, social movements and firms in the environmental governance system. This model, however, cannot be classified as pluralist: such groups still had limited access to governmental spheres at national level, although in they managed to exert certain political voice in urban areas. In rural states, such groups faced violent opposition from corporatist corrupted systems formed by land and governmental representatives.

The Convention on Biological Diversity (CBD)

Prior to the conference, the CBD was to be a simple multilateral and general agreement expressing conservationist and preservationist concerns. Nevertheless, it became increasingly complex issues related to biotechnology research and property rights were raised. Brazil sought support from biodiversity-rich nations as well as from wealthier states capable to explore such resources. Contrary to negotiations on climate change, Brazil played a leading role in drafting the Convention. Several aspects have contributed for that: biodiversity is an issue marked by high level of uncertainty: several models seek to estimate how much biodiversity can be lost without compromising the environment, but the scientific community is far from agreeing on the sustainable limits to the exploitation of biological diversity. There is even less consensus on how to assign market values to biodiversity.

In 1992, it was clear that no specific binding agreement could result from the conference. It was not a surprise that the CBD was an incomplete contract, with general provisions and long term compromises, and that more specific issue were to be dealt with in subsequent meetings. The convention was rather an initial engagement of signatory parties, which received support from Brazil as well as from developed states most notably from a recently created European Union, who saw in the environmental agenda an opportunity to strengthen its role as a global actor. Brazilian diplomacy succeeded in promoting multilateral dialogue and

reaching consensus, rather than pushing for specific or binding agreements.

Finally, the CBD sustained that the sustainable exploitation of biodiversity should be based on its 'intrinsic value' (subjective criteria), and on the ecologic, social and economic potential of its use. To accomplish these vaguely defined goals, parties were required to develop further plans and national strategies which included, for example *in situ* and *ex situ* conservation measures such as the definition of protected areas and the creation of gene banks, environmental impact assessment of industrial and residential projects and public access to information. Initial bilateral and multilateral cooperation frameworks, as well as voluntary agreements were establish to promote commercial access to biological resources and to share fairly those revenues among source countries and developers, to establish safety regulations and to accept liability for risk relating to biotechnology. By looking at the policy dimension, it is possible to observe the development of more flexible and non-binding implementation mechanisms and procedural regulation that characterize new modes of governance.

Going west: 1992 – 2000

In the 1990s, Brazil foreign policy was based on approximation with western countries, the opening up of its economy to foreign trade and investment and participation in multilateral regimes (Vigevani and Cepaluni, 2009). The years that follow the UNCED were marked by severe economic crisis and by the launching of an economic stability plan ('Plano Real') in 1994. While Brazil sought to obtain 'international credentials' by adhering to multilateral regimes – such as the Non-Proliferation Treaty in 1998, a broad discussion about the resilience of its economy – namely after the Mexican and South East Asian crisis – dominated the agenda.

Despite the focus on monetary and commercial policies, environmental aspects were incorporated into the political agenda, mainly due to external pressure. The effort to show this ideological alignment and to signalize preference for cooperation was translated into some federal policies for the Amazon region, indigenous populations and land conflicts. However, these reforms have not changed the structure and the relations of power between land owners, native populations, miners and small scale farmers. An example was the well-succeeded strategy of the landowners caucus (the multiparty *ruralista* group) to systematically prevent environmentally friendly reforms of the Forest Code of 1999, while trying to amend

bills that reduced the amount of land farmers in Brazil's Amazon region must maintain as forest (Lehahy, 2012)[6].

In the external realm, Brazil continued to be an important actor in the CBD framework. The country is the largest contributor among developing countries, and the 10th in the overall ranking. Between 1995 and 1997, Brazil occupied two vice presidencies representing the Group of Latin America and the Caribbean. Brazil has played an important role in promoting discussions and forwarding proposals on the exchange of information among contracting parties as well as in the realm of agrobiodiversity. On the other hand, one has a different picture with respect to forest biodiversity: by sustaining that each country should establish its own priorities regarding conservation, Brazil rendered negotiations particularly hard. This position weakened the program defined at the COP6, for example, which finished without pre-established goals.

The domestic sphere is marked by a dichotomy of bureaucratic development and weak implementation. In terms of legal and institutional framework, the aftermath of the UNCED is marked by first responses response to the demands that originated from the debates and the binding agreements concluded at the conference. The period witnessed institutional developments in the governmental spheres in order to prepare for future implementation of national plans. The creation of the Ministry of Environment (MMA) in 1992[7] and the Program for Biological Diversity (PRONABIO) in 1994 are among the most important developments. On the other hand, non-state actors have had limited participation in the definition of policies to contain biodiversity loss. Two factors account for this: first, clashing political ideologies among NGOs, which impeded the development of a cohesive 'green front' capable of exerting pressure on governmental instances and carving spaces for such organizations to present their views and their demands. The second factor refers to the poor transparency in the definition of priorities concerning biodiversity and the relative scarcity of institutional channels between government and societal actors. Also worth stressing is the fact that most Brazilian voters are primarily concerned with the provision of other public goods such as health and education, and do not perceive the environmental agenda as a sensitive issue.

The 1992 Summit provided an opportunity for non-state actors to express their positions and exchange points of view. In fact, NGOs interacted and communicated during the conference and in following meetings. However, they proved incapable of overcoming political ideologies, cooperating and building a strong and comprehensive green coalition. At the same time, certain environmental NGOs managed

to establish some dialogue with local governments (at municipality and state level) in Southeast and South regions of Brazil. Non-state actors in non-urban environments gained visibility and received support from international NGOs, but face aggressive opposition of local governments. In short, the poor mutual understanding and the lack of cooperation among these organizations indicates that network governance models cannot be identified in this phase.

Little progress had been observed with regard to the implementation the conventions on biodiversity and desertification, due to the scarcity of resources and means for implementation. Financing and technology transfer to promote sustainable development world worsened, which enhanced political tensions between economically developed countries and the developing world (Camargo et al., 2002). Some spaces for public involvement in biodiversity management projects at local level were made available through the project of local 'Agenda 21' and the Pilot Program for the Protection of Tropical Forests (PP-G7), supported by the World Bank, and through UN/UNESCO'S Program of Biosphere Reserves. By contrast, equivalent spaces have not been provided for the participation of non-state actors in the definition of encompassing, large scale biodiversity strategy. This striking difference between opportunities for political insertion at national and local levels is seen as an effect of the transition to democracy and the worsening of the environmental crisis, and the migration to systems of network governance. Environmental movements emerged as a 'complex multi-sectoral action conglomerate which can, in principle, actively participate in the implementation of local initiatives', although the state made only fragmented moves to implement preventive-proactive environmental policies (Vieira, 1998, 2).

2000-2010

Representatives of 193 countries and 737 credentialed NGOs attended the World Summit on Sustainable Development (WSSD), in Johannesburg in 2002. The aim of the conference was to assess the progress and setbacks in the implementation of the Agenda 21, this reinforcing the principles established in Rio. The debate was dominated in large part, by the need to migrate to low carbon and renewable energy alternatives. EU proposal to increase the share of renewables to at least 15% of global total primary energy supply by 2010 faced strong opposition of oil-producing countries (Saudi Arabia, Venezuela) and big consumers (Japan, USA). Nevertheless, the need for renewable, low-carbon energy sources became more

evident. Drawing on southern countries' strategy of linking predatory development to poverty and inequality, Brazil launched its energy initiative, backed by the country's technology and capacity to become a major exporter of sugarcane-based ethanol as a sustainable substitute for fossil fuels.

The Brazilian executive insisted on portraying Brazil as a southern country that has capacities and resources to develop a 'clean' energetic portfolio based on the spread use of biofuels from sugar cane and hydro-electric power plants. The core of Brazilian position was that the country needs an opportunity to develop. From the Brazilian official standpoint only throw growth the country will be able to fight inequality, hunger and to foster cooperation through multilateralism and cooperation with the south. Despite the support from the Barroso European Commission, and regardless the memorandum of understanding signed between Brazil and the US, Brazil has not been very successful neither in building up a stable coalition with other southern countries to balance US interests in the biofuel industry, nor spreading consensus amongst Europeans to adopt ethanol-based fuels in large scale.

Implications of the biosafety bill[8]

Biosafety regulation – a special form of impact assessment related to genetically modified organisms, carried out by executive agencies – has been considered as an essential tool for the deployment of biotechnology in the environment. In Brazil, Biosafety Law regulates two controversial issues: the production and commercialization of genetically modified organisms (GMOs) and stem cell research.

In its 1st article, the law lays down safety norms and enforcement mechanisms concerning the genetic construction, planting, production, manipulation, transportation, import and export, storing, research, trading and discards of GMOs and its byproducts. Scientific progress, protection of human, animal and vegetal life and the precautionary principle shall northern the implementation of the law. A National Biosafety Technical Commission (CTNBio) provides technical assessment of requests for planting GMOs. The final authorization depends on a decision of the National Council for Biosafety (CNBS). The Council, which was also created by the Biosafety Law, is attached to the presidency is composed by ten ministries plus the secretary of agriculture and fisheries. Representatives of the private sector and civil society may be invited to participate in exceptional character. Nevertheless, decisions are taken by absolute majority. This rule favors

specific groups and environmentally unsustainable behavior, as producers may continue to carry out hazardous activities with the approval of the Council.

The Biosafety bill reflected the preferences of biotechnology companies such as Monsanto and Bayer, for example, and large scale producers, whose intense and permanent lobby managed to modify the initial proposal. In practice, producers can obtain commercial authorization to grow genetically modified beans without the authorization of IBAMA and without risk assessment of the Brazilian sanitary agency – ANVISA because of the decision making rules in the CNBS. The Brazilian Forum of NGOs, together with the Social Movements for the Environment and Development (FBOMS) also protested against this modification; there was also opposition within the MMA itself.

Research on stem cells was one of the few issues that raised awareness of civil society, thus triggering the political participation of societal groups that were not traditionally involved in a broad discussion on biodiversity and biotechnology. The debate was polarized by religious groups, which condemned this type of research, whereas associations that support patients suffering from degenerative diseases and their families managed to pressure the congress to pass the bill. It must be stressed that both positions were defined on moral grounds, rather than on substantive scientific evidence or critical analysis of the same issue in other countries. However, medical research firms greatly benefited from the pressure exerted by theses associations and the media.

Conflicting positions between executive agencies and environmentalists on one side, and farmers and biotechnology companies on the other are frequent. Brazilian policy has been shaped by 'vested interests and political influence of powerful transnational corporations and specialized biotechnology firms in the private sectors, operating mainly in agriculture, forestry and medicine' (Vieira, 1998, 26). An example was IBAMA's attempt to forbid the commercialization of Monsanto's genetically modified soybeans. This initiative was repressed by the federal government, who issued a provisional act preventing the Institute from taking legal actions against other agencies (in this case the CNBS). Thus, public debate on the introduction or extension of new technologies is severely hampered by the highly technical character of the issue. The regulation of transgenic crops is a victory of farmers and biotechnology companies, and a serious defeat for the Minister of Environment and activist Marina Silva, who was replaced by the geographer and environmentalist Carlos Minc.[9]

21

A summary of the evolution of the political actors, institutions and issues relative to Brazil's environmental and biodiversity policy is provided below:

TABLE 2: Evolution of actors, institutions and policy issues regarding environmental protection in Brazil: 1970s-2000s.

	1970s	1980s	1990s	2000s
	Developmental state (predatory)	Transition to civilian government	Economic/commercial liberalization; External pressure	Revitalization of the developmental state /"Emerging power"
Actors	Landowners (veto players); Environmental state agencies Environmental associations	Landowners; Green Party (1986); Parliamentary Front (1987-8); NGOs and social movements (few channels in the national level); Firms	Landowners (*ruralistas*) Brazilian and int. environmental groups; Presidency Development bank (BNDES)	Landowners (*ruralistas*) MMA; Brazilian and international environmental groups; Presidency (tension between development and environmental concerns)
Institutional development	SEMA (1973) National system of nature conservation units (SNUC) Brazilian Institute for Forest Development (IBDF, extinct in 1989)	CONAMA (1981) IBAMA/CISNAMA (1986) Government committee regarding the CBD (1987)	Forest code (vetoed) BNDES projects; Ministry of the Environment (MMA, 1992); Extraordinary ministry to coordinate governmental action in the Amazon; PRONABIO (1994); Extr. Ministry of Agrarian Policy (1996)	Public consultations Consultations with various stakeholders; PRONABIO institutional reform (2003); CONABIO (2003); Biosafety bill (2005);Multi sectorial projects[10]; Council for the Management of the Genetic Patrimony (2001)
Policy issues	Integration of remote regions; Remediation of damages caused by pollution; Preservation of specific systems; Sugar-based ethanol program (Proalcool)	Energy policy Itaipu (hydroelectric) and Angra 1 (nuclear) plants Nuclear safety National Plan for Land Reform (1985, unfinished)	Increasing monitoring of deforestation in the Amazon region Demarcation of indigenous people's reserves; Biodiversity (historical responsibility); Negotiation of global regimes (CBD, Kyoto protocol, etc).	Sustainable use of biodiversity elements Managing biotechnology *In situ* and *ex situ* (gene banks) conservation measures; Negotiation of global environmental regimes (more active participation)

The way ahead

Today, Brazilian policy towards biodiversity reflects specific preferences and is far from being unified. In the external realm there is significant variation with respect to sub issues within the all-embracing biodiversity debate. Whilst the country has played an active role in negotiating agreements for the exchange of information and biotechnologies, as well as in matters related to agriculture, it has been successful in blocking negotiations related forest biodiversity. Another problem that needs to be further addressed concerns the establishment of protected areas and units of conservation. The problem lies rather in the effective enforcement of the corresponding legislation than in the formal establishment of new zones. Conservation units, whether established at national or state level, will only fulfill their purposes if illegal practices such as occupation for agriculture and irregular activities are monitored and sanctioned. The effectiveness of these units, in turn, depends on material and human resources, surveillance systems and law enforcement.

The greatest challenge for Brazilian biodiversity policy is to incorporate environmental concerns in its strategic development plans, and to move towards network models of governance that could render this agenda more democratic. So far, these two dimensions have been taken care separately. The priority given to big projects launched by the government, and the need to remain competitive in a period of economic crisis suggest a slow incorporation of environmental concerns in public projects. Environmental governance in Brazil is mainly statist-corporatist if compared to more pluralistic systems in Europe (Germany, for example) or to other federal governments such as the US. Initiatives praised by President Lula (2003-2010) such as 'Avança Brasil' and most notably the umbrella 'Plan for Growth Acceleration (PAC)', still need to take such aspects into account. So far, they still reveal the strong character of the state in fostering development. Launched in January 2007, the Plan for the Acceleration of Growth (PAC) has significant environmental impact, as more than half of the budget is invested in energy generation and distribution, most notably for the construction of hydroelectric power plants such as the controversial Belo Monte plant in the state of Pará, Northern Brazil. Despite President Rousseff's decision not to continue the nuclear energy program after the Fukushima disaster in 2011, many social and development public policies will have undeniable environmental impact if the presidency and the Ministry of Home Affairs pressure other ministries and agencies to authorize activities that do not fulfill environmental obligations.

Conclusions

This article aimed at identifying how the Brazilian policy towards the issue of biodiversity has evolved since the 1990s until today. The sources used in this study shows that Brazil's biodiversity policy, as other environmental policies still has a significant statist character. Private actors and local governments also have an important role, but do not tend to clash with central government's authority. Elements of pluralist governance are observed, most notably with the increase in the number of public consultations with regard biodiversity conservation plans. However, the technical character of certain discussions, and the weak mobilization of Brazilian voters around these issues pose a serious hindrance to more democratic and plural governance systems in this area.

The starting point of the study was the identification of marks in the evolution of biodiversity as a political issue, followed by the analysis of the subsequent changes that followed such formal choices. Between 1970 and 1990, environmental activism was mostly oriented towards political lobbying through the denunciation of destructive impacts of large scale economic development projects. Following the democratization process which took place during the 1980s, Brazilian diplomacy wanted to reinforce the image of a stable, democratic country willing to engage in multilateral efforts in order to tackle 'new' global issue. The debate around environmental protection and sustainable development projected Brazil in the international scene for several reasons: first, environmental protection raised increasing concerns in the west and among certain social movements and NGOs both in Brazil and abroad. Secondly, an opening economy called the attention of several foreign private actors, which sought to influence in the formulation of environmental (and biodiversity/biotechnology) policies in this domain.

The UNCED and its main outcomes – the CBD and the Convention on Climate Change – mark a new phase in the approach to these 'novel' environmental issues. The question was no longer *whether* institutions matter, but which institutional features could provide the necessary conditions for states to mutually adjust their behavior, and for non-state actors to have more voice in the definition of environmentally sound policies at different political levels.

At the beginning of the 1990's, 'green forces' were a heterogeneous group that included NGOS, technicians and administrators of environment-related State agencies, research groups and entrepreneurs. Despite the participation of firms and NGOs in the UNCED and thereafter, governance with respect to biodiversity

management fitted into a statist model, marked by the development of further environmental legislation at national level, by the establishment of environmental agencies and programs of biodiversity conservation such as PRONABIO, and by initiatives carried out at state level.

Although the issue of biodiversity loss gained more visibility, this has not lead to broad public participation. Two factors account for the lack of public debate: first, biodiversity was defined in terms which proved too vague to engender more concrete discussions and implementation measures. As other issues marked by high levels of scientific uncertainty, discussions remained too technical to allow for dialogue with organizations and movements. However, the main impeditive to a broad discussion about biodiversity policy in Brazil is due to the lack of institutional channels for public participation. What stands out regards Brazilian biodiversity policy is the lack of transparency, to justify or show by which means certain positions regarding the negotiation of biodiversity related agreements have been adopted.

Following the typology presented at the beginning of this article, Brazilian policy towards biodiversity seems to fit into a statist / corporatist model with few spaces for public participation, and lack of transparency in the definition of broader strategies. At the same time, privileged actors have exerted major influence over the regulation of GMOs.

Significant institutional development has been driven by the state, with little participation of civil society in the definition of broad strategy regards biodiversity. In any case, there has been progress with respect to the development of a bureaucratic structure to orient environmental policy-making in general, and some advances with respect to environmental legislation. On the other hand, most notably with respect to biodiversity, such developments have not been followed by an increase of implementation capacity, in large part due to budgetary cutbacks in the Ministry of Environment over the last years. With regard to the regulation of GMOs private interest of biotechnology companies played a major role in defining not only the objectives of the legislation, but also its institutional design, participation rules and decision-making procedures. The evolution of biodiversity policy in Brazil shows that the emergence of alternative modes of governance cannot be regarded as an evidence of the decline of the state. This phenomenon can be regarded rather as Brazil's ability to gain more significant projection in the international system through economic growth, rather than through the development of environmentally friendly technologies and combat of practices that have proven deleterious to the environment.

25

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[1] CBD http://www.cbd.int/convention/convention.shtml Accessed on 29/07/2012.

[2] Law no. 6.938, 31 August 1981. http://www.planalto.gov.br/ccivil_03/LEIS/L6938.htm Access on 10/07/2012.

[3] Law 7.735, 22 February 1989.

[4] See UNCED 1993. Report of the Brazilian Delegation.

[5] For a discussion on environmental justice and responsibility see, for example Caney, Simon. 2009. Climate change and the duties of the advantaged. *Critical Review of International Social and Political Philosophy* 12, n.º 2.

[6] President Rousseff partially vetoed the new Forest Code in May 2012 on the grounds that it would allow for uncontrolled deforestation without benefitting small-scale farmers. The project of reform of the Forest Code is available at http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=17338 (accessed on July 01 2012).

[7] Bill n.º 8.490, de 19/11/1992. Art 21º.

[8] Law n.º 11.105, of 24/03/2005. http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2005/Lei/L11105.htm Access on 10/05/2009.

[9] Dr. Izabella Teixeira (biologist) was nominated environment minister by President Rousseff in 2011.

[10] The Program 'Protected Areas of the Amazon' is a good example of multi sectorial, interdisciplinary project that brings together governmental and the third sector, as well as international organizations and foreign partners. See Ministério do Meio Ambiente (2011) for a further discussion.