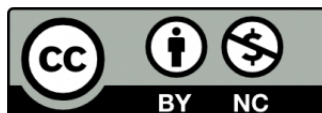




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# Climate governance in an international system under conservative hegemony: the role of major powers

*A governança climática em um sistema internacional sob a hegemonia conservadora: o papel das grandes potências*

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## Introduction

In the last five years, a series of broad movements – in both physical and social terms – has led to the consolidation of climate change as a key civilizational driver<sup>1</sup> of our time. On the one hand, the scientific community has gathered enough evidence to state that the phenomenon of an anthropic destabilization of the climate system is a near-consensus idea (IPCC 2007). On the other hand, the increasing number of extreme weather events has contributed to consolidate the perception that we are no longer faced with a theoretical speculation distant in time, but that there is an urgent and tangible reality in front of our eyes (WMO 2011). Such consequences have repeatedly been the subject of various researches in the most diverse fields of human knowledge.

As a consequence, many social processes – and the fields of science which study them – have had their dynamics altered: Economy, Politics<sup>2</sup>, Security and Defense, etc. In International Relations (IR), this double challenge could be explained as follows: in empirical terms, climate change imposes a deepening of cooperation levels on the international community, considering the global common character

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1 Civilizational macro-drivers can be defined as the deepest trends of the relation between mankind and the biosphere; population dynamics, human settlements around the planet, increase in work productivity, growing consumption of Earth resources and technological development are examples of these long-term trends. Bearing this in mind, the imbalance of the climate system is a position equivalent to other fundamental processes of our current civilizational process: globalization and democracy.

2 According to the notion of climate change being a key civilizational driver, in another work (Viola, Franchini and Ribeiro 2012) we argue that the concept of climate commitment should be used as part of the criteria to evaluate the quality of a democratic regime.

of the atmosphere; as to IR as a discipline, climate change demands from the scientific community a conceptual review of the categories designed to approach the development of global climate governance, in a context of systemic change.

The framework related to this double challenge is the migration of the climate issue to the core of international politics, which means that the patterns of cooperation and conflict that define this very sphere of social interaction will be more and more influenced by the characteristics of the responses to the climate challenge.

The continuing key role of the climate crisis for human future is related to the concept of planetary boundaries. In the natural sciences community, it is more and more consensual that increasingly anthropic pressure on the Earth system could lead to an abrupt change of global environment (Rockstrom et al. 2009). Being the leading drivers of global systemic change, human actions threaten to destabilize critical biophysical systems, having detrimental or even catastrophic consequences to mankind's well-being. For the last 10,000 years, Earth has been operating within the stable domain of the Holocene, where certain biogeochemical and atmospheric parameters have stayed within a relatively narrow range. However, since the industrial revolution, our actions have been effectively pushing a series of key processes of the Earth system out of the stable variation range. This shift signals the transition from the Holocene to the Anthropocene, which comprehends two processes: the anthropic factor as the leading driver of systemic climate change, and the deviation – which has profound potential consequences – from the stable patterns of the Holocene.

Within this framework, the scientific community has advanced in the identification of nine planetary boundaries within which humankind could safely operate. Transgressing these boundaries implies entering a risk zone of systemic environmental disruption. The notion of planetary boundaries rises as a new way to deal with sustainability, not in an isolated and localized form factor (sector analysis of growth limits and mitigation of negative externalities) as in the traditional environmental approach, but in a systemic, global fashion.

The nine planetary boundaries are: climate change, ocean acidification, stratospheric ozone depletion, nitrogen and phosphorus cycles, freshwater use, change in land use, rate of biodiversity loss, chemical pollution, and atmospheric aerosol loading. The first seven can be quantified, and three out of the nine planetary boundaries have already been crossed: climate change, rate of biodiversity loss and the nitrogen cycle.

The goal of this chapter is to discuss in both conceptual and empirical terms the structure of global climate governance, through an exploratory research, aiming at identifying the key elements that allow understanding its dynamics. In this structure, a specific kind of agent is prominent in shaping climate social outcome – the climate powers. These great state actors are considered leading agents in this specific area of governance, at the same time the formal regime – the United Nations

Framework Convention on Climate Change (UNFCCC) – loses its relevance in driving the global transition towards a low-carbon economy.

The notion of major power that is used here entails the capacity of societies, or in more specific terms, the convergence of the state, the market and civil society. It is not restricted to the idea of state power of the realist doctrine, described as a rational actor where internal social and economic dynamics are not relevant.

This discussion is theoretically framed accordingly to an international system under a conservative hegemony, which is open to change and uncertain. Conservative here reflects the inaptitude of current structures of global governance for responding to the problems of interdependence, among which – and mainly – climate change.

In order to achieve these aims, this chapter is divided into three parts. In the first section, the international system under a conservative hegemony is described. In the second section, the structure of climate governance is analyzed. In the last one, the role of super and great climate powers as pivotal agents in this structure is also analyzed.

## The international system under a conservative hegemony

Since the middle of the last decade, several movements in the international system converged to boost profound changes in its characteristics. Thus, new actors and new topics exert more influence on the outcomes of the field of IR. The migration of the climate crises to the core of international politics, the consolidated position of emerging nations, and the global economic crisis are probably the three most visible and transcendent movements, but it is clear that these are not the only ones.

First of all, the migration of the climate issue to the core of international politics is probably the most important systemic movement of the last five years, because it brings up the fact that it is not possible to maintain a sustainable civilizational path without a true reform of global governance structures. Some evidence of this movement includes: UN Security Council meeting to discuss climate change for the first time ever in 2007 and again in 2011; the creation of the Major Economies Forum on Energy and Climate to facilitate draft agreements to the negotiations at the heart of the UN; climate change as a recurring subject of G-20 and G-8 summits; massive presence of world leaders during the Copenhagen Conference (COP 15) in 2009 including the intense media coverage of the summit, and climate security becoming a key issue in the planning of the defense establishment of major powers.

This migration to the center of the global agenda is related to the fact that climate change has already transcended the typical limits of international environmental problems, usually limited in reach, and is progressively bound to the problem of defining a safe operating space for humanity. To the extent that climate

change can have serious consequences in areas which are key to IR, this issue is no longer secondary and becomes part of the main concerns from the international community. The first area, the economy, has progressively been consolidated as a key element of climate studies (Stern 2006). The second one concerns Defense and Security, since climate issues have a growing importance among academics and policymakers (CNA 2007; Mabey 2008; EUA 2010).

A second major shift is the consolidation of power redistribution in the international structure, as identified by Joseph Nye (2011): from the West to the East, from state actors to non-state actors. In the first case, the process has been synthesized by Fareed Zakaria (2008), who coined the expression “the rise of the rest”: non-traditional state actors come into play vis-à-vis central states from the post-war period, resulting in an increase of power to the former.

Another example of this new geography of power is the reproduction of groups of emerging countries with the goal of broadening their presence and influence in the system. The most relevant of such groups is the Brazil, Russia, India, China and South Africa group (BRICS). Inspired by a 2001 report from Goldman Sachs<sup>3</sup>, the group started working in 2006 as a discussion forum on great subjects related to global governance and became formal in 2010. However, it is a loose group because of major differences among the members.

The consolidation of the G-20 as a broad presidential forum for global governance is another example of the growing importance of the emerging countries in the system. Created in 1999, the forum reunited the 20 most important economies in the planet – developed and emerging – and accounts for approximately 80% of world GDP, 80% of international trade, 80% of greenhouse gases (GHG) emissions and 70% of the world’s population. During the 2008 economic crisis, G-20 led the international community’s efforts to avoid a meltdown of the global economy, due to the lack of legitimacy of the G-7 and the historical inefficiency of the UN General Assembly. Nonetheless, the challenges that have risen from interdependence have largely surpassed the group’s abilities to govern the international system.

The third significant change in the international system is a shift in the conception of the world economy, due to the increase in relative presence of the states to the detriment of the relative presence of free markets. As a consequence, there is a growing consensus regarding the concept of a mixed economy, in which the role of the state is both to regulate and to promote incentives in order to expand some national productive sectors (especially energy) and boost the power of specific economic agents. The growing role of public expenditure in the aggregate demand is now a common part of the landscape of global economies. This phenomenon is mainly explained by the huge market failure that set off the 2008 crisis.

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<sup>3</sup> Report by the Goldman Sachs Investment Bank on the future poles in the multipolar economic system, which are Brazil, Russia, India and China – emerging countries, great in terms of territory, population, natural resources and with heterogeneous societies and high levels of social inequality.

Recent changes in the international system have another crucial driver: the drastic change in the terms of trade (TOT). The rise in the price of commodities vis-à-vis industrial goods has been constant during the last decade – it started in 2003 and in opposition to what most analysts argued, it survived the outburst of the 2008 crisis.

In spite of these important facts, many of the characteristics of the pre-2007 international system still stand or, in some cases, have strengthened, such as interdependence, globalization and the expansion of democracy.

There are several diverging visions of these transformations in the current literature of IR (Nye 2011; Ikemberry 2011; Slaughter 2009; Zakharia 2008); however, we give preference to our own image of the international order, which is synthesized in the concept of international system under a conservative hegemony (Viola, Franchini and Lemos Ribeiro 2012). The key idea is that the current structure of global governance is unable to tackle the most pressing civilizational challenges of our time – the climate crisis and the economic crisis –, which have been aggravated over the last five years.

The criterion we use to qualify both the system and the agents in terms of conservative/reformists<sup>4</sup> is the degree of commitment to global governance and especially what we call ‘climate commitment’<sup>5</sup>. Climate commitment is a key indicator for global governance because the climate crisis demands a stronger cooperation response when compared to other issues. Regarding international actors, especially the great state powers, the more they commit to the construction of collective mechanisms of climate and economic governance, the less the system becomes conservative. However, empirical data show the challenges related to the growing interdependence do not have compatible global governance mechanisms.

The powerlessness that the UN had displayed during the post-war becomes clamant in our era, which is increasingly transnational, interdependent and characterized by a great acceleration of physical and social processes. Experiences with restricted structures of governance in terms of composition – but universal in terms of agenda – have been short on their results, like the G-20. To sum up, major powers that have a defining role in the international life are incapable and impotent in the conjuncture.

The notion of a conservative hegemony allows us to stress the key argument of this article; the climate crisis becomes a key civilizational driver and, as a consequence, it has a central role in defining the patterns of behavior among members of the international system. Within this framework, the category climate commitment can be used to assess the characteristics and trends in the

4 Reformist forces are those aware of the climate crisis and are willing to take post-soberanist measures to tackle it; conservative forces resist any major changes in the way business is conducted.

5 Climate commitment is defined as the level of awareness that a specific society has of climate change as a central civilizational driver. This commitment expresses itself not only in the state’s position in international negotiations, but in the emissions trajectory of GHG and in the depth of domestic climate policy.

international system; accordingly, it renders it impossible to hold a positive view due to the inability of current global governance structures to deal with this civilizational challenge.

This pessimistic vision of the international system is not related to changes among the main agents of governance. The problem lies on the very characteristics of the system: the climate and the economic crises have pushed forward the need for efficient mechanisms of global governance.

The building up of an effective, efficient global governance has as a necessary condition: the shifting from sovereignty to post-sovereignty in most societies, and particularly in the most powerful ones. This transformation requires moving from narrow national interest to a broader national interest interconnected with universal interest (humanity and planet). It also implies shifting from short-term to long-term approaches and interests. Among the major powers, in real behavior, China, the US, India, Russia, and Brazil are based in narrow national interests; South Korea and Japan have internalized a small component of global interests in their mindset; while the EU has incorporated more than the previous – but still far away from being sufficient –, narrow European interest is still strong; also, sub-national (individual countries) interest is strong.

There are two forms of sovereignty: in the most radical, national state prevails over individual rights and over international institutions (China, Russia), and they are authoritarian regimes. In the other form, national state is limited by individual rights of citizens but it considers itself above international institutions (USA, India, Brazil, Japan and South Korea). In post-sovereignty, national state is restricted by individual rights and surrenders part of its power to international institutions. This is what the European Union promotes but has failed so far because it does not have other partners.

According to this conception of the international order, the role of the great state actors – major powers – is essential to define the characteristics of this system. The concept of major powers in times of the climate crisis demands, in order to assess properly their level of agency, the incorporation of two key variables: climate power and climate commitment. Following these criteria, a network of conservative and moderate conservative countries prevails in the system. Moderate countries act in support of the conservative coalition when it comes to designing mechanisms of global governance.

In spite of this, there are reformist forces operating in the system, committed to a post-sovereignty type of global governance. These agents challenge the conservative hegemony and can be found at any level (from local to global) and sector (from public to private) of governance. These forces are increasing their level of agency but at an insufficient pace, thus not being consistent with systemic demands.

In sum, the governance problem becomes closely linked to interdependence, more specifically; it is linked to the lack of institutions compatible with the current

level of interdependence. Global governance structures cannot cope with the challenges that the growing influx of material and symbolic resources imposes at the system level. In the end, the rhythm at which social phenomena develops is largely faster than the ability of human communities to react, at least in this first stage.

## Multilevel global governance

The global governance structure can be divided into areas so it can be better understood. These areas have their own logic, agents and interaction dynamics that are particular. Climate governance has different levels in its structure – actors spread in a two-dimension scheme – from local to global, public to private. This architecture features a specific agent that has the capacity to influence the climate social outcome in a decisive manner. This agent is called climate power.

The concept of climate powers comprehends a combination of diverse dimensions of power. The first two dimensions have been widely contemplated in IR tradition: military capacity and economic power. The third dimension – climate power – is more innovative and closely related to the climate issue, and also less discussed. Climate power resides in: volume and trajectory of GHG in the atmosphere; human and technological capital to generate a considerable impact on the transition to a low-carbon economy; and the relation between resources and energy culture (Paterson 1996) – also called energy behavior.

It is important to stress the strong level of inter-relation among the economic, military and climatic dimensions – each one affects the content and evolution of the other dimensions. The concept of climate power does not exclude non-material power factors, like influence and prestige. In specific terms, the level of climate commitment can be a great factor of ascendancy over global climate dynamics. Based on these criteria, we identify three categories of climate powers:

**Superpowers:** United States, China and the European Union. Altogether, they account for 55% of world GDP and 47% of global carbon emissions. Superpowers share three important characteristics: first of all, they all have a high proportion in global GHG emission (at least 10%) and gross global product (at least 15%); second of all, they have relevant human and technological capital for the decarbonization of the economy; and lastly, they have the power to veto any effective international global agreement.

**Great powers:** Brazil, South Korea, India, Japan and Russia. They account for little less than 20% of world GDP and 20% of total emissions.

**Middle powers:** South Africa, Saudi Arabia, Canada, Argentina, Colombia, Ukraine, Thailand, Venezuela, Malaysia, Philippines, Australia, Bangladesh, Egypt, United Arab Emirates, Iran, Nigeria, Pakistan, Vietnam, Singapore, Indonesia, Israel, Mexico, Norway, Switzerland, Taiwan and Turkey.

The last two categories have limited importance in terms of global emissions share and participation in the world economy and, while acting on their own, they



lack the ability to veto a global international agreement. However, their behavior affects climate governance, since they can tamper with or boost the trajectory of global decarbonization. This last feature is especially decisive when considering great powers: an occasional great powers alliance could deeply change global climate politics.

In terms of climate<sup>6</sup> commitment we classify the leading state actors of global climate governance as follows:

**Conservative:** India, Russia, Argentina, United Arab Emirates, Indonesia, Saudi Arabia, Iran, Egypt, Nigeria, Pakistan, Thailand, Ukraine, Venezuela and Vietnam.

**Moderate conservative:** USA, China, Brazil, Canada, Colombia, South Africa, Malaysia, Mexico, Turkey, Israel, Australia, Bangladesh and Philippines.

**Reformist:** Norway, Taiwan, Switzerland, Singapore, the European Union, South Korea and Japan.

## Major climate powers in the transition to a low-carbon economy

In this section we analyze the role of each super and great power in the global governance of climate change, both in terms of climate power and climate commitment. To do so, we consider key economic (GDP, population), climate (GHG emission, low-carbon capital, carbon intensity, vulnerabilities), social (social climate awareness, commitment to global governance), and political (climate politics and policies, international stance) features of each country.

We use different sources of data. For GDP – always by purchasing power parity (PPP) – and population, International Monetary Fund (IMF)<sup>7</sup> data; for GHG emissions and carbon intensity of GDP, authors' own estimations based on World Resource Institute Climate Analysis Indicator Tool (WRI-CAIT)<sup>8</sup>; and for vulnerabilities assessment, the Maplecroft Climate Change Vulnerability Map (Maplecroft 2011).

### Superpowers

The United States continues to be the most important country in the global climate governance arena, due to the fact that it is the second in global emissions and has the greatest potential of low-carbon technological innovation of worldwide impact (Giddens 2009). US has a population of over 313 million, a US\$ 15,1 trillion GDP and a US\$ 48,000 per capita GDP. The US emits, annually,

<sup>6</sup> This evaluation of policies considers the domestic positions as well as the international ones of each country on the climate problem, and analyzes the tendency of influx of policies regarding the conjuncture.

<sup>7</sup> Available at <[www.imf.org/external/data.htm](http://www.imf.org/external/data.htm)>.

<sup>8</sup> Available at <<http://cait.wri.org/>>.

7.8 tons of carbon dioxide equivalent (CO<sub>2</sub>e) – 15% of world emissions, 25 tons per capita figures and 0.5 ton for US\$ 1,000 in GDP. The US is a moderate conservative in terms of the low-carbon economy transition and its vulnerability to climate change is medium.

The American economy operates under a relative high energy efficiency and low carbon intensity when compared to global standards, but it features one of the highest carbon intensity among developed countries due to its oil- and coal-based mixed energy matrix and large use of airplanes and individual cars as transportation. US emission rose 0.8% from 2001 to 2008, and after 2008 they have been stagnated as a result of the economic crisis and will probably remain as they are, a positive outcome of the increase in oil prices.

The American government became extremely reckless during the Bush Administration (2001–2008), after leading the negotiations on the Kyoto Protocol alongside the European Union during the Clinton Administration (1993–2000).

The first four months of the Obama Administration signaled that the new government would tackle both the economic and climate crisis at once, boosting the decarbonization of the economy, as it considered that the two crises were associated. At the beginning of his term, a proposal of caps and trade was submitted to Congress, deepening and providing national reach to legislation already in force in California and New England (Speth 2010).

However, this process lost momentum. The Waxman climate and energy bill, which imposes caps and quotas for carbon emission, was passed by the House in June 2009 and remained stuck in Senate during the second semester due to the Obama Administration healthcare reform priority over other proposals.

Several factors account for this failure: extreme bipartisan polarization in Congress resulted in legislative paralysis and crisis of governability; high unemployment rates eroded Obama's approval ratings; the extreme cold winter of 2010 in the East Coast, demagogically used by the Republican Party as an example of the excesses in the assessments of global warming threat; strong lobbying by oil, coal, steel, cement and electricity industries against the climate bill arguing that it would make the American industry less competitive.

Strong opposition to emissions reduction commitments is observed in Congress; they mostly arise from the lack of formal commitment from great emerging countries, particularly China. In addition, since 2009 the issue of climate change has progressively become an issue of partisan cleavage between democrats and republicans, similar to abortion and guns control. (Rothenthal 2011). This fact makes it harder to debate based on scientific facts (or even common sense) and, thus, the possibility of a bipartisan agreement is drastically low. Should this cleavage consolidate itself as an element of American internal politics, the prospects of decarbonization of the US economy – as well as of the global economy – will be compromised.

The problems of governability of the American democracy express, to some extent, the strong division in this society: one part is open and sensitive to globalization and the other is more closed and fundamentalist, and resorts to a semi-isolationist ideology. It is also observed as a deeper movement, the progressive erosion of the basic American values, steaming from the weak and uncertain economic recovery, the constant (un)employment crisis, the increase of social inequality and the growing stagnation of social mobility – possibly the most powerful driving force of American culture.

The dynamics of traditional (conservative) forces versus decarbonizing (reformist) forces in the United States can be described as: in the private sector, middle-size oil companies, thermoelectric utilities, and the car industry (with the exception of Ford, even if the company's efficiency level is not the same as the level of Japanese car makers) are conservative. Reformist forces are the solar, wind and nuclear energy sectors; information and technology industries like Google, Microsoft, Apple, Oracle and CNN; biotechnology, engine and capital goods, like General Electric; and the big retail chains, like Wal-Mart and green construction suppliers, among others. The bioenergy sector holds an intermediate position, to the extent that it represents an option in renewable energy, but it is produced from corn – inefficient when compared to other crops.

In politics and society, New England, New York, Maryland, California, Oregon, Washington and Illinois are considered reformist forces; especially New England and California, which already have climate legislation. The conservative forces predominate among most of the other states. The largest civil society organizations committed to climate governance are based in the United States, as well as the largest scientist community of climate research anywhere in the world; the most climate skeptical think tanks are also based in the US, with a high level of impact on national politics. As to the media, most national broadcast companies accept the scientific consensus regarding the climate issue (New York Times, CNN, Washington Post), but the Fox network and the local media are very conservative.

The United States have a good potential of emissions reduction through technological change from thermoelectric utilities to “clean coal” (cleaner technologies) and carbon capture and storage (CCS); expansion of wind, solar, and nuclear energy and biofuel; reduction in size and increase in car efficiency; upgrading of electrical power grid; and the establishment of new green standards of construction – buildings and houses designed or remodeled to reduce emissions (Sachs 2009).

In the beginning of Obama's term, there was an expectation in Europe that the US would advocate a role of co-leadership alongside the EU in global climate politics. This expectation was closer to become a reality in May 2009, but, when the Waxman Climate and Energy Bill was eventually passed by the House in June 2009, the prospects were less favorable, due to the fact that the commitment of reducing emissions was set to only 3% (base-year 1990), distant from the 20%

proposed by the European Union and insignificant when compared to the 30–40% demanded by the IPCC. Finally, as argued before, the project was abandoned in 2010.

Despite the attempts from the Democrat Administration to increase its climate commitment<sup>9</sup>, the US position on climate change has been conservative in the last decade. The official discourse of the American diplomacy is skeptical of the urgency in signing a legally-binding document in the realm of the UNFCCC and insists on the need of all great climate actors being included in the efforts of mitigation.

The European Union is formed by 27 countries and has a population of around 500 million people, a GDP of US\$ 15.8 trillion and a per capita GDP of US\$ 31,500, and emits 5.7 billion tons of CO<sub>2</sub>e – 11% of global emissions – and a 11 ton per capita figures and 0,36 ton of carbon for US\$ 1,000 of GDP. Generally speaking, its vulnerability to the effects of climate change is medium and has a strong potential in terms of low-carbon technology.

The EU is heterogeneous, both in terms of per capita emission and carbon intensity: low in Nordic countries, Germany, the UK and France; medium in Spain, Belgium and Italy; and high in Poland, the Czech Republic, Romania, Bulgaria, and in Baltic countries. EU's emission increase at a 0.5% annual rate, as a result of stable emissions figures from Germany, the UK and Sweden, and the fast increase of emissions from Spain, Portugal, Greece and Eastern Europe countries – the latter countries are still below their 1990 baseline. However, just like in the United States, the economic crisis affected deeply the trajectory of emissions between 2008 and 2011, and in this particular case, lowering emission levels below 2007 figures.

The main political leaderships of the EU in the last few years have been in favor of an incisive action to mitigate global warming, despite the different degrees of climate commitment among its members, which also expresses the heterogeneity of the bloc. The governments and public opinion of the UK, Germany, Austria, Sweden, Netherlands and Denmark altogether with France, Belgium, Finland and Ireland – albeit the latter ones having a lower profile – are the most reformists. Of all EU's big members, Germany and the United Kingdom are leaders; the former has a historical commitment to sustainability, which can be noticed in the political relevance of the environmental movement and the Green Party, and the early Industrial Recycling Bill of 1991.

Regarding the UK, in the last few years, the British government has had the most advanced position among EU countries, as it passed in Parliament a law

9 The Obama Administration is still committed to the low-carbon transition, forced to do so in areas in which there is less resistance, as shown, in February 2012, by its leadership in the international initiative of emissions reduction of three greenhouse gases of high radioactive effect – black carbon or soot, methane, and hydrofluorocarbons (HFCs). The American initiative was released alongside the governments of Sweden, Canada, Mexico and Bangladesh, and comprehends the creation of an initial fund of US\$ 15 million (US\$ 12 million from the USA and US\$ 3 million from Canada); more countries are expected to join as the program advances.

that established a carbon budget, in November 2008, and the releasing of The UK Low Carbon Transition Plan, in July 2009. With this program, the UK has committed itself to reducing emissions in 34% by 2020, considering 1990 as the base-year (British Government 2009). The liberal presence in the new coalition government, which started in June 2010, has granted the continuity of this policy, even if at a slow pace due to the severity of the economic crisis.

In terms of international positions, the UK government – under the Blair and Brown Administrations – was more proactive than their German counterparts, even if Germans are more advanced in the transition to a low-carbon economy. Yet, the decarbonization of the German economy is happening keeping a large industrial sector, whereas the British decarbonization takes places under severe decline of manufacturing. Among other big EU countries, France is a responsible actor regarding the climate, with low per capita emissions and an energy matrix based on nuclear power. The country, however, is less responsible than its British and German partners and will probably not meet the goals of the Kyoto Protocol; Italy, on the other hand, lacks a serious climate policy.

Regarding other important countries of the bloc, Denmark has been on its way to becoming independent from oil for some time, led by conservative governments little committed internationally to the climate crisis until 2007. From this year on, the foreign climate profile of the Danish government has increased after the victory of a coalition headed by the Social Democrats.

Poland's economy features high per capita emissions figures, originated from a heavily coal-based energy matrix and low responsiveness from the public opinion regarding climate change. These elements put the Polish government along with the Italian one in the conservative coalition in the realm of the EU. Until 2007, Spain had also had a negligent position, but in that year, it admitted that their growing emissions during the last decades were an issue.

The 2008 economic crisis and the consequent instability in the Eurozone eroded the European ability to lead a transition towards a low-carbon economy, yet Europe is still the only reformist superpower. Considering that, the degree of agency of the bloc in the architecture of climate governance progressively withers. The EU only led the climate governance process between 1996 and 1998, alongside the American administration. After this period, the bloc was unable to guide the process, albeit some attempts. However, an occasional failure of the European project would be a huge setback in the prospects of humanity creating more efficient global governance mechanisms, since it is the first and only post-sovereignty large-scale experiment ever tried.

In current international negotiations, the EU radicalizes its position on the American conservative behavior and tries to isolate them from the West. However, its attitude towards China is less stiff, because the EU does not demand so hard from the Chinese, as they do from the Americans, their commitment to a legally-binding mitigation agreement. Consequently, the EU does not give enough

importance to a key issue in shaping global climate governance: the growing role of the great emerging countries.

China has a population of 1.35 billion people, a US\$ 11.3 trillion GDP and a US\$ 8,400 per capita GDP, emits 10.9 billion tons of CO<sub>2</sub>e a year – 21% of global emissions, 8 tons per capita and 0.96 tons of carbon for every US\$ 1,000 of GDP. Among the superpowers, China is the only one that has a high level of vulnerability to the effects of climate change, while some of its areas face extreme risks. It is a very carbon-intensive economy, due to its heavily coal- and oil-based energy matrix and, notably, its low energy efficiency. Contradicting the common sense approach, China's per capita emissions are medium, not low.

The costs of reducing emissions in China will be high, should the current model of industrialization be maintained, but a shift towards a model in which the internal market and an increase in productivity replace the export-led growth model is viable. The regime, however, is afraid of making this transition and remains in a conservative position, not being able to anticipate the problems and being reactive instead. In such terms, the Chinese political system shares the same dysfunctions of the great democracies.

The position of the Chinese government – in both energy and climate policies, as well as in international negotiations – had been negligent until 2006, when it started to change based on the country's vulnerabilities assessment of climate change; that is why the country operates as a moderate conservative agent in the climate global governance structure. The government has pushed the development of wind and solar power and announced the goal of reducing their emissions growth rate. This goal was put forth in China's National Climate Change Programme and in the anti-crisis stimulus package passed in November 2008, which had a 35% share of public expenditure on the transition to a low-carbon economy.

The government's effort to improve the energy profile of the economy includes the extension of the nuclear power plants network – the number of planned nuclear power plants surpasses the number of facilities combined worldwide – and the building of hydroelectric power plants, China being one of the economies that uses this source of energy the most. According to McKinsey & Company (apud The Economist 2012), a consulting firm, this official attempt to progressively abandon the dependency on coal is not that simple: the fractured structure of the local mining business, the abundance of this mineral in both China and countries capable and willing to export it to the Chinese market – Australia, Indonesia and Mongolia – conspire against the official plans of demand reduction.

Regarding the Chinese position in international negotiations, it was lagging behind when compared to their new energy policy. Addressing the UN General Assembly, in September 2009, President Hu Jintao announced that the country was willing to take responsibility in the fight against global warming and signaled the goal of reducing China's carbon intensity in its GDP at a yearly rate of 4–5%, between the years of 2005–2020. Nonetheless, China is still reluctant to commit

to a peak of emissions and to a stabilization year prior to 2020 – as claimed by the international scientific community, the EU, the United States and Japan. This fact increases the ammunition of conservative groups in the American Congress.

As to technology, there has been great advance in both efficiency and productivity from Taiwanese photovoltaic solar energy companies, since 2009, and the formation of joint ventures for massive investment in China in a large program called “low-carbon cities.” After 2009, it is safe to say that there are two Chinas carbon-wise: on the one hand, a predominant traditional China, a powerhouse and exporter of carbon emissions; on the other hand, a new low-carbon China, still small, but which grows at a fast rate due to a very high savings and investment capacity of the country that will create a generation of new low-carbon entrepreneurs whose interests are contrary to the ones from traditional China. Thus, China is a conservative power for its history until 2008, but shows strong signs of low-carbon trends due to green investments from that time on.

The reformist Chinese elite is located in high development poles, especially Shanghai, and in sectors of solar, wind and nuclear energy. In parallel, the conscience over the climate threat is bigger in the coast than it is in mainland. There are several elements that combined can explain the growth of reformist forces in Authoritarian China. First of all, three important drivers of decarbonization: a) a strong perception of the vulnerabilities to climate change in society; b) the need to maximize the competitiveness of the new economy; and c) the attempt to add soft power to the country. Second of all, the dynamics of the Communist Party, which in the last two decades has prioritized the technical skills and scientific background of its members over political ideology. Restoration of Confucian cultural heritage plays an important role in favor of climate sensitiveness.

In 2012, globalist forces continued to gain ground in their movement to command the Chinese Communist Party (CCP), and determine Chinese politics as a consequence, against nationalist forces. The biggest evidence of this process is the fall of the powerful governor of the Chongqing province (33 million inhabitants), Bo Xilai, who for many years had been a prominent figure in the CCP. After charges of corruption and a quick move from CCP leaders, Bo Xilai was removed from party posts, losing any chance of influence in the ongoing political transition. Bo’s removal is a positive sign of certain political and economic structural reforms: changes in the development model, shifting from exports to domestic expending and consumption and less exchange rate manipulation over the Yuan; some degree of political liberalization; awareness of environmental issues as a result of growing popular complaints and dissatisfaction with the degradation of the environment<sup>10</sup>. Considering that these movements are convergent with the position and interests from the core of democracies, should they become successful, these movements

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10 In an event of historic proportions, authorities of the Chinese Communist Party were obliged to abandon the building up of a big copper smelting refinery due to disseminated protest and riots in Sichuan province in July 2012.

may help building systemic governance, in terms of global governance and climate governance.

## Great powers

India has a population of 1.2 billion people, a US\$ 4.5 trillion GDP and a per capita GDP of US\$ 3,700. It emits, annually, 3.6 billion tons of CO<sub>2</sub>e – corresponding to 7% of world emissions, 3 tons of carbon per capita and 0.8 tons for every US\$ 1,000 of GDP. It features a low per capita emissions rate and high carbon intensity due to low energy efficiency and elevated presence of coal and oil in the energy matrix. Approximately 70% of the country's electricity has coal as its source, and considering that over 300 million Indians have no access to electricity, it is reasonable to expect that there will be a strong expansion of the demand over the next few years (The Economist 2012). In this context, coal is a natural option, to the extent that India is the world's third largest supplier and the fifth in reserves. At the same time, the anticipated demand of energy can make India the leading importer of coal in the following years.

This increase in demand is also backing the development of clean alternative options, such as solar photovoltaic and wind energy, faster than Brazil, but slower than China. India has been partly developing ethanol, since it is the world's largest sugar supplier, even though most of its production is for human consumption. The country features medium potential in terms of capital for the low-carbon transition and, in terms of vulnerability, is extremely exposed to the effects of climate change, a unique case among great powers. India is a conservative great power.

India's emissions grow at a 6% yearly rate. According to a report from Mckinsey (apud The Economist 2012), they will be 2.5 times higher in the year 2030, resulting in the approximate figure of India accounting for 10% of the increment in global emissions. The position of the Indian government has been historically negligent, just like the Chinese counterparts, and has not changed yet. Some academic and government sectors in India have elaborated a conspiracy theory based on historical grudge against the West, particularly against the British, entitled Carbon Colonialism, according to which the proposals of carbon mitigation in developing countries are a way of maintaining the status quo of underdevelopment.

The voluntary commitment of the country presented at international forums is to reduce its carbon intensity of GDP in 20–25% by 2020 when compared to the levels of 2005, but excluding the agricultural sector. Indian authorities justify their conservative position arguing that India features a low level of per capita emissions and that there is a development imperative, which demands that 470 million people be taken out of poverty (IISD 2011). The negative side to the low per capita emissions figures is the high fertility rate (2.8 children per woman). In terms of birth rate, India is the most non-responsible among the BASIC countries, along



with South Africa (2.7 children), in contrast with China (1.3 children) and Brazil (1.9 children), both below replacement rates (The Economist 2011).

India is a democratic regime – albeit being a low-quality democracy due to the heritage of the caste system – and has an important environmental movement, which contests, with a certain degree of ambivalence, the official position. The Indian government is very fragmented and inefficient, which makes it even harder for a transition towards a less-carbon economy to take place. Approximately 18 Ministries work on climate change subjects and there is no clear leadership from none. The combination of an inefficient political regime, with extreme regional inequality and a very particular perception of natural catastrophes conspire against a better form of governance of the climate issue in India.

Russia has a population of 142 million people, a US\$ 2.4 trillion GDP and a US\$ 16,700 per capita GDP. It emits 2.8 billion tons of CO<sub>2</sub>e per year, which corresponds to 5.5% of global emissions, 20 tons per inhabitant and 1.2 tons of carbon for every US\$ 1,000 of GDP. It features a medium vulnerability to the effects of climate change and has small capital for the low-carbon transition, a single case among great and superpowers. It is a society that has enriched greatly in the last decade, but has low energy efficiency and an energy matrix heavily based on fossil fuel, being a large exporter of oil and gas. The country operates as a conservative power in the global governance of the climate.

Russia has an extremely particular position in world climate affairs for the following reasons: i) Russia sees itself as a potential loser in the scenario of a low-carbon economy, since its greatest economic feature is a plethora of fossil fuel; ii) among the great emitters, the country is the only one whose elites and opinion makers perceive – at least until the extremely hot 2010 summer – that global warming could favor their interests, since it would greatly expand their arable lands.

Japan has a population of 128 million people, a US\$ 4.4 trillion GDP and a per capita GDP of US\$ 34,000. It emits 1.4 billion tons of CO<sub>2</sub>e a year, which corresponds to 2.7% of total emissions, 11 tons per inhabitant and 0.32 tons of carbon for every US\$ 1,000 of GDP. Japan is the economy with the lower carbon intensity worldwide, due to its enormous energy efficiency and the preponderant role of nuclear energy in their power supply. The country is highly vulnerable to the negative effects of climate and a very high potential in terms of low-carbon capital; however, this potential is restrained by the unwillingness of society and the government to lead this transition at the world level. Despite this, Japan is a reformist country in the climate arena.

Part of Japan's public opinion and an important part of Japanese companies and entrepreneurs (Honda and Toyota are emblematic) are in favor of an expedited transition to a low-carbon economy. Japanese society seems to have internalized the last two decades of economic recession in a unique way, progressively becoming a post-growth society, in which the reality of stagnation does not bring significant trouble for life in community. Despite this, Japanese society is still closed, extremely

hierarchical and aging, which makes it less sensitive to the influxes of globalization and places considerable limitations for it to become a paradigm in terms of global dynamism, as it had been in the 1970s, when the reforms carried out after the first oil crisis (1973) placed the country on the cutting edge of energy efficiency and technology.

Japan's leadership role in international affairs lags behind its potential due to Japan's low-profile foreign policy and, more recently, to negative effects on the aftermath of the Fukushima nuclear disaster. Despite the fact that the definite effects of the plant's explosion are still unclear, it is possible to say that there were carbonizing consequences – as well as effects on the balance of payments – for the Japanese economy, as a result of the temporary shutdown of most of the reactors. In the long run, the commitment of Japan with the development and use of non-fossil technologies is complex. On the one hand, Fukushima was absorbed by elites as an external event; thus, the accident had little impact on the legitimacy of the nuclear option. On the other hand, the impact on society in terms of insecurity was larger, which strengthened the anti-nuclear alliance, with an uncertain impact on politics.

South Korea is a reformist great power that has a population of 49 million people, a US\$ 1.5 trillion GDP and a per capita GDP of approximately US\$ 31,000, emits annually 676 million tons of CO<sub>2</sub>e – representing 1.3% of global emissions, and 14 tons per capita and 0.43 tons of carbon per US\$ 1,000. South Korean society has a high level of exposure to effects of climate change and is important because the country has a very large capital of human and technological resources to lead the low-carbon economy transition.

In the last few years, South Korea has kept a profile that places the country on the forefront of the low-carbon economy transition, which includes a goal of emissions reduction of 30% by 2020 from the business as usual (BAU) emissions scenario (IISD 2011). Due to this fact and because it operates close to the technological frontier, the country deserves this place among the great climate powers, even if their share of global emission is not that significant. The Korean program is an ambitious bet that combines capacity for innovation, technological capital and human capital. The Korean elites were the most skillful and were able to manage the financial and climate crisis, earmarking 80% of their fiscal rescue package for clean policies.

Finally, it is important to recall that the Korean economy is highly competitive – based on the coexistence of big enterprises and the State – and in which the decision making process offers a dialogue channel between corporate boards and political offices, making the mechanism of policy implementation more efficient. By doing so, the transition to a low-carbon economy takes places under heavy state interventionism – in the sense that corporations and the government work together –, when compared to what happens in Frances, Germany or the United Kingdom.

Brazil has a population of 195 million people, a 2.3 trillion GDP and a per capita GDP of US\$ 11,800. Its annual emissions are around 2 billion tons of CO<sub>2</sub>e – 4.5% of world emissions – and 11 tons per capita and 0.9 ton for every US\$ 1,000 of GDP. In the last five years, Brazil transitioned from the conservative side to the moderate conservative field in global climate governance. This transition had three main pillars: a) drastic reduction in deforestation rates between 2005 and 2011 (Viola and Franchini 2012); b) a voluntary commitment to reduce emission trajectory in November 2009; and c) the sanctioning of a Climate Bill (Brazilian Law no. 12,187) at the beginning of 2010.

However, after this positive impulse between 2009 and 2010, the climate and environmental agenda has suffered considerable setbacks, like the expansion of the oil sector, the reform of Brazilian Forest Code, increase in gasoline consumption, the stagnation of ethanol, and the persistent expansion of individual/private transport. Policies at the federal level have abandoned the focus on issues of low carbon, in particular, and environmental, in general: not only has the implementation of the Climate Law barely advanced, but, in early 2012, the government also responded to the international crisis with a traditional carbon-intensive industrial stimulus package, focused on the car manufacturing sector and decided to eliminate taxation on oil consumption on the same day as Rio+20 ended, in June 2012.

## Conclusion

Two main drivers shape global climate governance: climate power and climate commitment. Climate power refers to the level of influence of certain agents over the climate social outcome at systemic level. Climate commitment analyses how the logic of governance in this field is defined by the interaction among forces that understand the climate problem as a civilizational crisis – reformist – and forces that resist the profound transformations necessary to stabilize the climate system – conservative. In this dynamics, the conservative forces are predominant and this accounts for the reason why the international system is defined in this article as one under a conservative hegemony: the system's evident incapacity to develop an adequate response to the major challenges of our time, such as global financial crises, climate change, and planet boundaries, which are deeply-demanding problems, requiring considerable governance capacity.

The structure of climate governance is extremely complex and comprehends diverse dimensions – economic, environmental and security – and several actors – public and private, local and global. Yet, there is a type of agent – a state actor – whose concentrated capacities can exert high influence on climate social outcome: climate powers. At times when focusing on the formal climate regime – UNFCCC – results in fruitless attempts to evaluate the future of global politics in this field, it is convenient to adopt an approach based on the behavior of these specific state actors.

As discussed before, the majority of super and great powers are not reformist – the US, China, India, Brazil and Russia –, and those who are – the EU, South Korea and Japan – lack the agency necessary to stimulate global behavior more favorable to the stability of the climate system. The fact that the US and China are moderate conservative is central to our analysis: American society is divided, and it hinders any pro-global governance policy; China is at a slow pace and taking an uncertain road to low carbon. The only superpower committed to climate governance – the EU – is going through a process of economic and political crisis that compromises its ability to lead global decarbonization. This is the main reason for which the international system is blocked when it comes to this issue, and this is why it is described as conservative.

The year of 2009 changed profoundly the international political economy of climate change. The combination of the political failure of Copenhagen and the suspicions regarding climate science after the so-called *climategate* (Prins et al. 2010) spread feelings of cynicism, on one side, and skepticism, on the other. The heritage of the Kyoto Protocol, which left the United States and the great emerging countries out of carbon constraints, has been dismantled (Ladislav 2010). Evidence suggests that the Kyoto Protocol is ceasing to exist as an emissions reduction mechanism in 2012, placing more uncertainty over capacity of the UN system to respond properly to the climate problem.

A new treaty – comprehensive and legally binding – is virtually impossible unless the United States passes a climate bill that imposes quantified emissions reduction. Due to the current political dynamics, this is unlikely to happen. The most optimistic scenario (2013–2014) includes the reelection of President Obama in November 2012, victory of Democrats in the House of Representatives and in the Senate and the decision of reelected President Obama to prioritize the climate bill at the beginning of his second term. The shale gas revolution from 2011 to 2012 – which promises to deepen in the near future – will likely have mixed and uncertain impact in the readability of the American society to decarbonization.

The economic and security dimensions of the international system have a key impact on the climate dimension and it is necessary to promptly take them into account in any credible analysis of the future of climate governance. The global economic crisis that started in 2008 has given the climate problem a lower priority – one consequence of the crisis – when compared to demands of economic recovery, as observed in the American midterm elections of 2010. Most mainstream economists and opinion formers continue separating the climate crisis from the economic crisis.

If this trend of cooperation and continuing depolarization persists in the international system in the following years, and Obama is reelected in 2012, the United States will be more susceptible to a change in its position – from a moderate conservative superpower to a reformist one. It is not likely but it is possible to think a future scenario in which an alliance among the EU, Japan, South Korea,

Brazil and the United States could persuade/constrain China, Russia and India to set their emissions peaks and different stabilization years inside the range set by scientific predictions.

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## Abstract

In the last five years, climate change has been established as a central civilizational driver of our time. As a result of this development, the most diversified social processes – as well as the fields of science which study them – have had their dynamics altered. In International Relations, this

double challenge could be explained as follows: 1) in empirical terms, climate change imposes a deepening of cooperation levels on the international community, considering the global common character of the atmosphere; and 2) to International Relations as a discipline, climate change demands from the scientific community a conceptual review of the categories designed to approach the development of global climate governance. The goal of this article is to discuss in both conceptual and empirical terms the structure of global climate change governance, through an exploratory research, aiming at identifying the key elements that allow understanding its dynamics. To do so, we rely on the concept of climate powers. This discussion is grounded in the following framework: we now live in an international system under conservative hegemony that is unable to properly respond to the problems of interdependence, among which – and mainly –, the climate issue.

**Keywords:** climate change; climate powers; global governance; the international system.

## Resumo

Nos últimos cinco anos, a mudança climática tem se estabelecido como um condutor central de nosso tempo. Como resultado desse desenvolvimento, os mais diversificados processos sociais – bem como os campos científicos que os estudam – têm tido suas dinâmicas alteradas. Em Relações Internacionais, esse duplo desafio pode ser explicado da seguinte maneira: 1) em termos empíricos, a mudança climática impõe um aprofundamento nos níveis de cooperação na comunidade internacional, considerando o caráter comum global da atmosfera; e 2) para as Relações Internacionais enquanto disciplina, a mudança climática demanda da comunidade científica uma revisão conceitual das categorias concebidas para abordar o desenvolvimento da governança climática global. O objetivo deste artigo é discutir em ambos termos empírico e conceitual a estrutura da governança em mudança climática global, por meio de uma pesquisa exploratória, com o objetivo de identificar os elementos-chave que permitam entender sua dinâmica. Para isso, levamos em conta o conceito de potências climáticas. Esta discussão está fundamentada sob o seguinte quadro: nós agora vivemos em um sistema internacional sob uma hegemonia conservadora que é incapaz de responder adequadamente aos problemas da interdependência, dentre os quais – e principalmente –, a questão climática.

**Palavras-chave:** mudança climática; potências climáticas; governança global; o sistema internacional.