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In a few months, on 7 December 2009, 195 countries will meet in Copenhagen with a common mission: to find a way out of the climate change crisis. The Climate Change Conference –COP15 in UN jargon– aims to lay the foundations of a post-Kyoto agreement that provides workable solutions for a problem that threatens 'to lead to some impacts that could be abrupt and irreversible'[1] and undermine global security.

This key meeting on the international agenda will coincide with one of the worst economic crises in living memory. What began as a financial crisis with its epicenter in the US has evolved into a world economic crisis that threatens both developed and emerging countries with a deep recession. This economic context, together with the geo-political tensions that always emerge around the issue of energy, adds a high degree of uncertainty to the negotiations that seek a solution to the complex puzzle of climate change.

In 2007 the Intergovernmental Panel on Climate Change pointed out that 'atmospheric concentrations of CO_2 exceed by far the natural range over the last 650,000 years, due primarily to the fossil fuel use, with land-use change providing another significant but smaller contribution'.[2] If specific mitigation policies are not implemented, the 'average temperature will very probably increase between 1.8º and 4ºC by the end of the century'.[3] In other words, there is a very real likelihood of breaching the 'prevention thresholds' identified by the scientific community, that consider 2ºC the maximum reasonable limit. Greater increases would take the world into unknown territory, as it is a mere 5ºC that separates us from the last glacial period.

Despite the efforts of the international community, real progress in terms of mitigation has so far been limited, as Rajendra Pachauri[4], President of the IPCC, stressed in his acceptance speech of the Nobel Peace Prize. Although the IPCC published its first scientific study on the impact of climate change in 1990, greenhouse gases have continued

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[1] Intergovernmental Panel on Climate Change (IPCC), 'Summary for Policymakers', in IPCC, Climate Change 2007, Fourth Assessment Report, Cambridge University Press, 2007, http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf, p. 13.

[2] *Ibid.*, p. 5.

[3] *Ibid.*, p. 7. The expression 'very probable' is the classification that the IPCC uses to designate a likelihood of over 90%.

[4] R.K. Pachauri (2007), Acceptance Speech for the Nobel Peace Prize Awarded to the Intergovernmental Panel on Climate Change (IPCC), Oslo, 10 December 2007, http://nobelprize.org/nobel_prizes/peace/laureates/2007/ipcc-lecture.html.

to increase at a significant rate, rising by 70% between 1970 and 2004. The signing of the Kyoto Protocol in 1997 was a significant step forward in the right direction, but there is a pressing need for the major emitter countries, such as the US, China and India, to be involved. The expiry of the Protocol in 2012 and its current renegotiation with its sights set on 2020 open up an opportunity to ensure that climate targets and the involvement of players are more in keeping with the magnitude and severity of the problem.

Therefore, the 2007 Bali Summit[5] established a 'route map' that laid down the aspects to be negotiated in the run-up to the Copenhagen Summit. These aspects include measures regarding mitigation, sinks, adaptation, technology and funding. Although there is a wide consensus regarding the principles on which the agreement should be based, the heterogeneity of interests and economic contexts of each country makes it more complex to turn into reality. The leading world powers, the big players, need to play a clear and decisive leadership role to overcome these barriers. Initiating a new cycle in the world's response to changes in the climate requires that the countries involved assess if the existing institutional architecture[6] is the most appropriate for the magnitude of the challenge involved and to establish the necessary response times.

This paper puts the climate crisis into context and after considering its confluence with the energy constraints and economic crisis, it tackles the various existing institutional options. Finally, and given the clear relationship[7] between climate change and global security, it explores the role of the United Nations Security Council.

An Economic Crisis with Historical Implications

When the Copenhagen Summit is held at the end of 2009, the world will be in the midst of the worst effects of the first major global economic crisis. According to the latest IMF report[8] 'output is projected to decline by 1.3 percent as a whole in 2009 and to recover only gradually in 2010'. The downturn in business and unemployment will provide the backdrop to the climate negotiations.

While the governments are taking extraordinary measures, the crisis has already had a consequence from which there is no turning back: the awareness that economic power has globalised, spreading from West to East and to the emerging countries, and that effective global action is needed to overcome the traditional national sphere. On this occasion, the

[5] UNFCCC (2008), Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007.

[6] *Joseph Aldy & Robert N. Stavins (2007),* Architectures for Agreement*:* Addressing Global Climate Change in the Post-Kyoto World*, Cambridge, UK. See also Aldy & Stavins (2008), 'Climate Policy Architectures for the Post-Kyoto World',* Environment*, vol. 50 (3),* http://www.environmentmagazine.org/.

[7] Geoffrey D. Dabelko (2008), 'An Uncommon Peace: Environment, Development, and the Global Security Agenda', *Environment*, vol. 50 (3), *http://www.environmentmagazine.org/*.

[8] IFM (2009), *World Economic Outlook: Crisis and Recovery, April,* Washington DC.

developed countries urgently need cash injections from the surpluses accumulated in China, Russia and the United Arab Emirates.

When the crisis is eventually overcome, it will be remembered that it marked the end of the G-8 and that the G-20 replaced it. As stated by the declaration[9] of the last G-20 meeting held in Washington to deal with the crisis, 'We underscored that the Bretton Woods Institutions must be comprehensively reformed so that they can more adequately reflect changing economic weights in the world economy and be more responsive to future challenges. Emerging and developing economies should have greater voice and representation in these institutions'.

One of the risks posed by the economic crisis is that it might postpone the Post-Kyoto agreement in Copenhagen. However, economic recovery and the fight against climate change should not be seen to be conflicting, since both can and must go in the same direction. The magnitude of the crisis requires an expansive fiscal policy sustained over time to boost the economy. This time, given a scenario of climate change and scarce fossil fuels, major and sustained investment in energy efficiency and renewable energies is more than justified. Although though these policies will be costly and will increase the deficit,[10] they will be profitable in the medium term and could create millions of new productive 'green' jobs.

In Spain and Germany the renewable energy sector currently employs 350,000 people and is expected to overtake the conventional car industry by 2020. A 'Green New Deal',[11] as the United Nations Environmental Program (UNEP) has called for, might serve as an urgent stimulus to the economy and ensure sustainable public expenditure.

This idea has taken off strongly in the US, where President Barack Obama, in the 'New Energy for America'[12] document, proposed to allocate US$150 billion over 10 years to create 5 million jobs. According to Obama, 'our dependence on oil is one of the greatest threats we have ever faced. It is a threat to our national security, our planet and our economy'. Obama's new energy policy[13] and targets could rapidly transform the US into a leader in climate change solutions.

[9] G20 (2008), "Declaration of the Summit on Financial Markets and the World Economy", Washington, 15 November 2008, *http://www.whitehouse.gov/news/releases/2008/11/20081115-1.html*.

[10] Paul Krugman, 'Deficits and the Future', *New York Times*, 1/XII/2008, also, see Paul Samuelson, 'Some Good Advice for Barack Obama', *The Wall Street Journal*, 18/XI/2008.

[11] UNEP (2008), 'Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World', United Nations Environment Programme, Nairobi, *http://www.unep.org/labour_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf*.

[12] 'New Energy for America', *http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf*.

[13] For an analysis of Barack Obama's future energy policy and targets see Paul Isbell (2009), 'A Preliminary View of Obama's Future Energy Policy', Working Paper nr 2/2009, Elcano Royal Institute, Madrid.

The Energy Crisis: A Revolution in Progress

The economic crisis and the climate crisis are converging with another crisis or transformation related to the growing scarcity of fossil fuels, which currently account for nearly 80% of the global demand for primary energy. The foreseeable increase in prices and the insecurity regarding the conventional supply of gas and oil will have far-reaching economic and geo-strategic implications.

In July 2008 the price of a barrel of oil reached a record high[14] of US$147, which pushed up the price of food[15] and most other products. Even though there is a cyclical component to part of this increase, it is widely accepted that conventional fossil fuels will structurally begin to be scarce in the near feature due to the sharp increase in demand and to limited reserves. This points to a horizon of energy transformation.

The International Energy Agency, in its last *World Energy Outlook 2008*,[16] called for 'an energy revolution'. According to the IEA: 'We cannot let the financial and economic crisis delay the policy action that is urgently needed to ensure secure energy supplies and to curtail rising emissions of greenhouse gases'. Furthermore, and for the first time ever, the IEA said that the 'peak in oil extraction' was in the near future. In a recent interview with the British daily *The Guardian*,[17] the IEA's Chief Economist, Fatih Birol, stressed: 'In terms of non-Opec, we are expecting that in three or four years time the production of conventional oil will come to a plateau and start to decline. In terms of the global picture, assuming that Opec will invest in a timely manner, global conventional oil can still continue but **we** still expect that it will come around 2020 to a plateau as well which is, of course, not good news from a global oil supply point of view'.

The stagnant growth of conventional oil might be positive for climate change if it leads to a leap in energy efficiency and the use of renewable energies. However, it might be very negative if technologies tend towards coal and non-conventional oils such as tar and bitumen sands, whose carbon content is very high. At the same time, the end of oil and cheap gas announced by the IEA will make it very attractive to use sources such as coal that are abundant and close to the markets. This is particularly true of countries like China, the US, India and Russia, who account for 65% of the world's known coal reserves. Nor can we rule out a scenario in which the fight for access to increasingly scarce energy resources strains international relations and inhibits the adoption of climate agreements. An example of these tensions was seen in Europe in the winter of 2009: Russia cut gas

[14] The historic maximum (at real prices) was reached in 2008 at US$147/barrel. Data from NYMEX (New York Mercantile Exchange, http://www.nymex.com/).
[15] FAO (2008), *The State of Food Insecurity in the World 2008: High Food Prices and Food Security –Threats and Opportunities,* Food and Agriculture Organisation of the United Nations, Rome.
[16] IEA (2008), *World Energy Outlook 2008*, International Energy Agency, Paris.
[17] *The Guardian*, 15/XII/2008, http://www.guardian.co.uk/business/2008/dec/15/oil-peak-energy-iea.

supplies for several weeks and seriously affected countries[18] like as Finland, Bulgaria and Lithuania, who are 100% dependant on Russia.

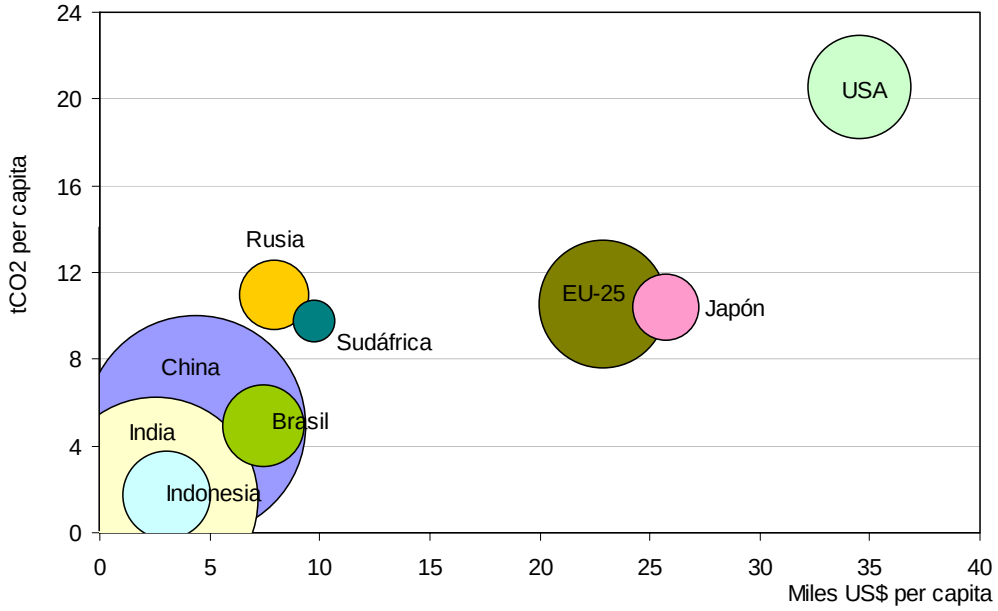
The Unprecedented Challenge of the Climate Crisis

Reducing emissions so that 'they do not interfere with the climate system', by means of a non-traumatic energy transition, requires the world energy system to be deeply transformed towards a low-carbon economy.[19] The IPCC scenarios forecast that, in the absence of global climate policies, the concentration level in the atmosphere at the end of the century will probably be over 650 ppm. This needs to stabilise at around 450 ppm[20] in order not to exceed the 2ºC 'prevention threshold'.

For the climate system to move towards safe concentration levels, according to the IPCC, global emissions need to peak in approximately 2020, be halved by 2050 and continue to fall until the end of the century. Taking into account the existing strong economic and demographic inertia, and by pure arithmetic,[21] this means that the global average *per capita* emissions should be close to two tons of CO_2 per person a year in 2050 and then be reduced to one ton in 2100. This goal (see Figure 1) is a long way from the current 20 tons in the US and 10.5 in the EU-25, and has even been exceeded by China and Brazil. An example that illustrates the magnitude of this challenge is that flying from London to New York means CO_2 emissions of 1.4 tons per person.

[18] *The Economist*, 'Pipe Down', 2009.
[19] Sarah Ladislaw, Kathryn Zyla & Britt Childs (2008), "Managing the Transition to a Secure, Low-carbon Energy Future', World Resources Institute and Center for Strategic and International Studies, Washington.
[20] *Ibid*., IPCC (2007).
[21] N. Stern (2008), 'Key Elements of a Global Deal on Climate Change', London School of Economics and Political Science, London.

Figure 1. The magnitude of the climate change challenge



Note: the size of the bubble represents the population.
Source: the authors, with data from the World Resource Institute, 2005.

The only important emitter that has so far made any real progress in mitigation is the EU. Between 1990 and 2005, the EU-15 reduced its emissions by 2%, while the reduction of emissions in Russia is explained by its industrial-economic collapse after the fall of the Soviet system.[22] Even though it is possible to separate economic growth and emissions, the question is whether the separation is viable worldwide over the coming decades and to the necessary extent.

Emissions in China and India have increased substantially over the last decade, even though in China –and breaking the stereotype– energy intensity has decreased at double the rate of Europe in the last decade. In other countries, such as Indonesia and Brazil, the increase in emissions has been accompanied by a rapid reduction in forest mass. The disappearance of these primary forests also means a great loss in terms of biodiversity, apart from the loss in CO_2 sinks.

Given these considerations, there are two decisive on which to reflect. First, by 2020, approximately 90% of humanity will belong to emerging and developing countries, whose per capita income will be between seven and 10 times lower than in the rich countries. It is reasonable to think that these countries' absolute priority will be economic growth to close the breach and that they will opt for an energy model to serve that central goal.

[22] *The Economist*, 'Enigma variations', 27/XI/2008. The Gross Domestic Product in Russia fell by 40% between 1990 and 1999 and was the greatest economic depression in history except for the period between the wars and more serious than even the US Great Depression.

Secondly, a successful climate change strategy is impossible in the medium and long term without the involvement of emerging countries, as their emissions will exceed those of the economically-developed countries by 2020. In fact, even if developed countries were to reduce their emissions to zero, the expected growth of the emerging and developing countries would make it highly difficult to achieve the climate stabilisation goals.

As the Kyoto Protocol Comes to an End, What Next?

The Kyoto Protocol[23] was the result of intense political negotiations and represents an initial attempt to contain the risks of climate change. This international agreement enabled specific contents to be given to the undertaking of the Earth conference held at Rio de Janeiro in 1992, where 198 countries agreed to act in a coordinated manner to 'reduce greenhouse emission concentrations to a level that does not interfere with the climate system'. The central goal of the Kyoto Protocol, signed in 1997 and ratified in 2005, is for developed countries (Annex I)[24] to reduce their joint emissions by 5.2% with respect to the levels of 1990 between 2008 and 2012. Although the Kyoto Protocol was a positive step forward in the fight against climate change, its successes and limitations need to be considered in terms of its renegotiation in Copenhagen in 2009.

The most notable advance made by the Protocol was that the international community managed for the first time to establish mitigation goals and specific timelines. Furthermore, the reduction in emissions was based on the two fundamental principles that must underpin any climate negotiation: (1) the 'cost-effective' reduction of emissions, by means of flexible mechanisms;[25] and (2) the 'equitable' distribution of the burden, applying 'differentiated' targets according to the historical responsibility and capacity of each country.

At a more technical level, special mention should be made of the important progress made in monitoring emissions, conducting inventories and accounting of sinks. This work is vital to objectively assess any progress made. Another fundamental advance over the years that the Protocol has helped to reinforce is the role and consolidation of the use of science and the scientific system to underwrite and advise on climate agreements. During this period, the IPCC has gained huge credibility among governments and citizens

[23] Kyoto Protocol to the United Nations Framework Convention on Climate Change, (1998) 37 I.L.M. 22.
[24] Annex I Parties in the UN Framework Convention on Climate Change (UNFCCC) consists of most Organisations for Economic Cooperation and Development countries and those with economies in transition.
[25] As its causes and consequences are a global problem, emissions can be reduced where it is cheapest. This usually happens in less-developed countries, where technology is less advanced and mitigation potential is greater. According to the IPPC (2007, p. 37), the countries in Appendix I have a greenhouse gas emissions intensity per GDP of 0.683 (Kg CO_2/US$) while for those not in Appendix I the figure is higher and reaches 1.055.

around the world and this is the key inheritance to build the future post-Kyoto agreement on a solid and objective base.

Along with the advances brought about by the Protocol, there are also limitations that should be pointed out. The main one is that the principal greenhouse gas emitters are not part of the Protocol. The US has not ratified it, Russia lacks real targets due to its economic collapse and China and India have not been incorporated. These four powers account for half the world's emissions. Furthermore, the Kyoto targets are not binding[26] for the signatories.

In practice, some of the principles on which a climate agreement should be based have been undermined. First, the 'leadership principle' by which wealthy countries inspired the Rio Conference has not been applied due to the US refusal under the Bush Administration to mitigate its emissions. Secondly, the 'cost-effectiveness principle', or the possibility of reducing emissions cheaply, lost a great deal of its potential as the Protocol only applied to some countries. In fact, this could have led to a carbon leakage phenomenon. In other words, the real or fictitious fear of becoming less competitive could make some companies decide to relocate their operations to countries with lower environmental standards and thus increase global emissions. Thirdly, the 'equity principle' has become outdated as certain countries such as Rumania and Poland, with Kyoto targets, have been overtaken in per capita income by other countries without any targets, such as Singapore, South Korea and the United Arab Emirates. Finally, the mitigation rate for the Kyoto phase, even though successful as an initial step, is highly insufficient if the idea is to abide by a 'precaution principle'.

Despite these limitations, the overall assessment of the Kyoto Protocol is positive, as it has helped to open up a pathway despite the difficulties. Its fundamental contribution is to have enabled mechanisms and structures to be created that will be necessary to make good progress in the future.

A 'Deep, then Broad' Approach to Climate Leading

In order to reach an important agreement in Copenhagen in 2009, it is necessary to reflect on the format that the negotiations should take. The two fundamental dimensions of any international agreement are: (1) the scope or depth of the commitments; and (2) the range of countries involved. Both should be as wide as possible to achieve the necessary reduction in emissions.

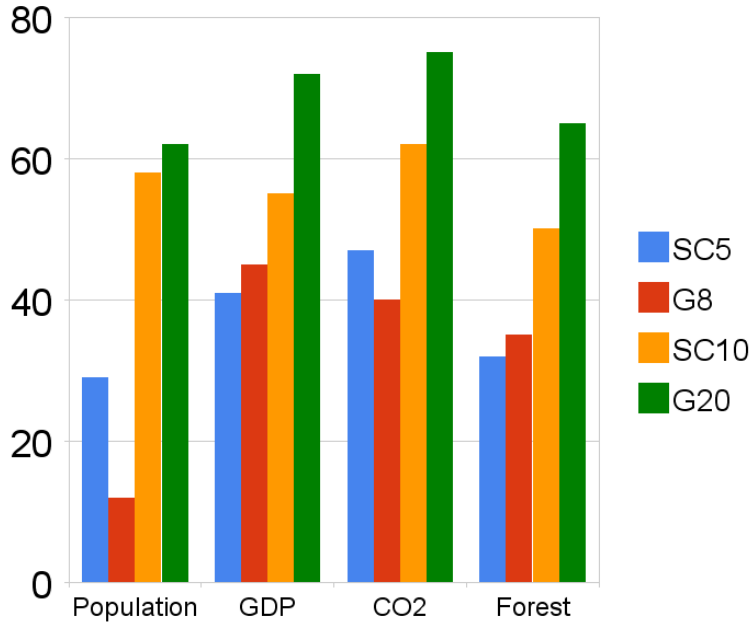
The Kyoto Protocol and the UNFCC have a 'broad, then deep' type of structure, as it enables a significant participation in the agreements, although their depth is very limited

[26] The only exception in this respect is the EU, which introduced an emissions market in 2005 that tackles 14,000 industrial installations and 50% of the emissions.

due to the absence of key players. In the current context, a 'deep then broad' approach needs to be adopted to achieve a rapid and substantial reduction in emissions. The most pressing current need is for the main emitter countries to sit down at a negotiating table to reach an agreement on key climate aspects. The leadership of these powers would ensure the ideal conditions to tackle and extend these agreements to the 195 UNFCC countries at the December meeting in Copenhagen in 2009.

Figure 2 shows the different combinations that could make up this 'climate' negotiating group. The coalitions or groups are based on the different structures adopted to deal with other global problems, such as G-8[27], G-20[28], the permanent members of the Security Council (CS5) –the US, China, the UK and France– or a possible enlargement of the Council to include Brazil, India, Japan, Indonesia and South Africa (CS10).

Figure 2. Coalitions for negotiation prior to Copenhagen 2009 (% world total)



Note: SC5 refers to the five permanent members of Security Council and SC10 is an expansion of the Council that includes Brazil, India, Japan, Indonesia and South Africa.
Source: the authors, based on data from the World Resource Institute, 2005.

The representativeness of the G-8 in the current world context is clearly out of step. However, the CS10 coalition has many of the characteristics that are desirable to reach a climate agreement: (1) the number of countries is limited; (2) it represents nearly 4,000 million inhabitants; (3) it accounts for over 60% of world emissions; (4) it accounts for half

[27] The G-8 includes Germany, Canada, the US, France, Italy, Japan, the UK and Russia.
[28] The G-20 was created in 1999 and includes the G-8 countries, the 11 main emerging powers (Saudi Arabia, Argentina, Australia, Brazil, China, India, Indonesia, Mexico, Korean Republic, South Africa and Turkey) and the EU as a block.

the planet's forests;[29] and, furthermore, (4) it is a benchmark of today's leading cultures. These characteristics will be increasingly marked in the future given energy, economic and demographic inertia.

Other configurations are, undoubtedly, possible, but it will much less difficult for these few entities to reach agreements on the three fundamental issues:[30] (1) the reduction of global emissions; (2) maintaining forests; and (3) the transfer of technological and financial resources.

Architectures for a Post-Kyoto world: The Role of the United Nations

The Copenhagen Summit requires a debate[31] on the design of the most effective institutional framework for a post-Kyoto future. There are currently two approaches: (1) architectures in which the United Nations plays a fundamental role as the administrative and executive authority; and (2) *ad hoc* architectures that operate in parallel to international institutions.

The first approach proposes a reinforcement of the current architecture whereby climate decisions are taken at the United Nations Conference (UNFCC). Managing and controlling the magnitude of the required programmes and funds would completely swamp the current capacity of the Environment Programme (UNEP). Therefore, and as suggested by Sir Nicholas Stern,[32] it would be necessary to either expand the programme or create a new specific institution similar to the International Monetary Fund or the World Bank. This institution would be in charge of managing the global mechanisms that could be created, such as the setting up of an international emissions market. The World Bank has already offered to take up some of those tasks[33] and, in particular, those relating to their funding mechanisms.

Another option is to assign the management of the climate targets to a G type group, which would operate in a similar way to the G-8 or G-20. That body would function in a coordinated way with international institutions and would transfer compliance of the targets and actions to the national sphere, to regions and to cities.

[29] Taking into account forests, the importance of Canada and Australia would have to be highlighted, as they account for 7.8% and 4.1% of the world's forest mass. Both powers have maintained their forest resources at stable levels over the last 15 years.
[30] Jeffrey Frankel (2008), 'An Elaborated Proposal for Global Climate Policy Architecture: Specific Formulas and Emission Targets for All Countries in All Decades', Working Paper, Harvard Project on International Climate Agreements.
[31] See Harvard Project on International Climate Agreements, www.belfercenter.org/climate.
[32] *Ibid*., Stern (2008).
[33] Development and Climate Change: A Strategic Framework for the World Bank Group *ended on 15 September*.

The main advantage of the *ad hoc* structures is their potential for quick decision-making, but their greatest limitation lies in the difficulty of ensuring that they are 'binding' and stable in time. Furthermore, there would be an undesirable drain of the contents that come under the United Nations as the entity entrusted with managing global public assets. Therefore, should *ad hoc* structures be necessary for cyclic purposes, they should end up being integrated within the United Nations bodies.

The Earth's climate as a public asset and its worrying evolution bring us to a debate regarding institutional architecture that transcends the debate on the modernisation and effectiveness of the United Nations. Ultimately, climate change raises the recurrent dilemma of where to place the frontier between the sovereign right of the States and the need to protect global common assets, such as the Earth's climate, which has enabled the evolution of life on our planet and which is currently under threat.

Exploring the Security Council's Role

As science has advanced in the understanding of climate change, the emphasis has moved from a problem of environmental sustainability towards one of global security. It is therefore necessary to consider the role that it can play within the institutional architecture of the United Nations Security Council.

The relationship between climate change and security is being analysed in detail by the leading political and scientific authorities. Javier Solana, the High Representative for European Foreign Policy, recently submitted to the European Council –whose members are the Heads of State and Government of the EU– a report titled 'Climate Change and International Security'[34] which identifies potential impacts and risk zones. Lower rainfall, falling agricultural production, rising sea levels[35] and the increased intensity and frequency of climate disasters will aggravate famines and humanitarian crises.[36]

Likewise, the National Intelligence Council[37] has recently indicated that climate change might mean that 'types of conflict we have not seen for a while –such as over resources– could re-emerge'. An example[38] is the position taken by Russia and the countries bordering the Arctic to control oil resources and new trade routes. Another qualitative risk factor is the spread of the nuclear option and its possible geo-strategic or military use. Although it is difficult to predict how these factors will develop, we know that many of

[34] J. Solana (2008), 'Climate Change and International Security', Paper from the High Representative and the European Commission to the European Council, S113/08, 14 March 2008.
[35] *Ibid*., IPPC (2007).
[36] O. Brown, A. Hammill & R. McLeman, (2007), 'Climate Change as the "New" Security Threat: Implications for Africa', *International Affairs*, 83, nr 6, p. 1141-1154.
[37] NIC (2008), 'Global Trends 2025: A Transformed World', National Intelligence Council, p. 5.

[38] The Economist, *'Troubled Waters', 3/I/2009.*

them are interconnected and can generate a cascade effect[39] with a significant destabilising potential.

Given this situation, and at the initiative of the British Government, its then Foreign Secretary, Margaret Beckett, chaired a session[40] of the United Nations Security Council in April 2007 devoted exclusively for the first time to climate change. During her speech, Beckett pointed out that climate change 'is not a traditional problem of national security, but rather one related to our collective security in a fragile world with increasing interdependence'.

The United Nations Charter[41] grants the Security Council the legal authority to respond to the causes and consequences of security threats. Article 6 allows the Council 'to investigate any dispute, or any situation which might lead to international friction or give rise to a dispute' and, in Article 7, it is authorised to 'recommend or force the States to take decisions to ensure peace and security is maintained'. These articles have recently been applied to prevent civil wars and to tackle crimes against humanity.

For the United Nations Security Council to have the sufficient capacity and representation to turn round the global climate crisis, it would be necessary to extend and reformulate the current veto right of the so-called major powers. Although a detailed analysis of this topic is outside the scope of this paper, it should be said that the expansion[42] of the Security Council has been a pending issue for some time in international institutional architecture. Its current configuration was in response to the situation following the Second World War and it is a truism that the current multipolar world[43] is very different to that of 1945.

The Security Council can play a determining role in activating climate agreements and negotiations between the main powers. It can also be a neurological centre to manage the adaptation measures that, in addition to the mitigation policies, will be necessary over the coming decades. It would therefore also be convenient to establish the Council's political and legal limitations[44] and for states to agree on any possible future measure.

[39] CSIS/CNAS, 'The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change', November 2007, http://www.cnas.org/climatechange.
[40] SC (2007), Security Council 5663rd Meeting, 'On Impact of Climate Change on Peace, Security', 17/IV/2007.
[41] Charter of the United Nations, 26/VI/1945, Can. T.S. 1945 No. 7, http://www.un.org/aboutun/charter/.
[42] Daniel W. Drezne (2008), 'The New New World Order', *Foreign Affairs*, March/April, vol. 86, nr 2.
[43] Richard N. Haass (2008), 'The Age of Nonpolarity; What Will Follow US Dominance', *Foreign Affairs*, May/June, vol. 87, nr 3.
[44] K. Penny (2008). 'Greening the Security Council: Climate Change as an Emerging Threat to International Peace and Security'', *International Environmental Agreements*, nr 7, p. 35-71. For an analysis of legal issues referring to the Security Council, see B. Simma *et al*. (2002), *The Charter of the United Nations: A Commentary*, 2nd edition, Oxford University Press, Oxford.

Conclusions

The 2009 Copenhagen summit is a key moment to achieve a post-Kyoto climate agreement. The magnitude of the challenge is huge, and urgent and drastic durable action is required to turn around the climate crisis.

The current economic crisis and the emerging energy constraints should not delay the necessary adoption of an ambitious climate agreement. First, because the implications of climate change will be notable and will affect the most vulnerable countries, and because deferring it will only serve to aggravate the damage. And, secondly, because there is the possibility, if a Keynesian environmental policy is used, of climate change being tackled in a single direction. Strong private and public investment in developing a low-carbon economy is the lever to stimulate the economy and to yet again generate long-term and productive jobs. This transformation would help to prevent risks in terms of competition and guaranteed supply and also avoid possible conflicts between states arising from the scarcity of energy. The massive development of clean and renewable energy sources is necessary and it is also fundamental that they are more evenly distributed.

The Kyoto Protocol experience has shown that the main emitter countries need to be pro-active and take the leadership role for the Copenhagen negotiations to be successful. Eight decision centres –the US, the EU, China, Russia, India, Japan, Brazil and Indonesia– hold the key to solving the climate crisis. These countries are responsible for two out of every three tons of greenhouse gases currently emitted to the atmosphere. Among the big players, the US needs to be the driving force it is expected to be and, in this new era, its innovative and technological machinery must be used to fight climate change and to ensure international cooperation.

An effective approach to these agreements would be, as the Secretary General of the United Nations, Ban Ki Moon, has already requested, for the main emitter countries to hold a meeting prior to the Copenhagen summit. This meeting would be the antechamber where agreements would be discussed and possibly reached on different key aspects, such as establishing mitigation targets, maintaining forests and the funding of mechanisms for technology transfer and adaptation. The meeting should also be attended by the leading political figures from each country. An agreement in political terms between Heads of State and Government regarding the four or five fundamental elements would facilitate the subsequent setting of the more technical aspects and their extension to the other countries within the UNFCC.

Once the agreements have been reached, they will need to be implemented and be made to be long lasting. Even if they might eventually take place in *ad hoc* structures in the interest of expediency, it is important that they are then incorporated into the United

Nations. The proliferation of Groups (G-8, G-10 and G-20) outside the UN threatens to make the institution irrelevant and this would be a serious setback.

Industrial architecture is necessary in accordance with the magnitude of the challenge. It is also required to control and coordinate the enormous quantity of resources that will need to be mobilised, since the architecture and implementation of the US Framework Convention on Climate Change in 1992, although positive, is clearly insufficient. The negotiations in Copenhagen not only have to be an opportunity to reach a climate agreement, but also to design an institutional architecture to enable international governance to be improved by ensuring that the United Nations institutions continue to be its backbone. Despite their limitations, the UN institutions continue to be the most effective and natural places to manage global assets across state frontiers.

Strengthening the institutional framework of the United Nations, raising the institutional rank entrusted with managing climate change and facing up to the aforementioned security effects mean that the Security Council has to be given a leading role. An option that should be considered at the Copenhagen Summit is that it would be an expanded and renovated Security Council in the future that assumes the strategic direction of the fight against climate change, together with the United Nations General Assembly.

The Security Council would have the operational support of an International Agency to be fully focused on climate change and having a similar standing and power of action as the International Monetary Fund, the World Bank and the World Trade Organisation. The Security Council, the General Assembly, the International Agency and the Intergovernmental Panel on Climate Change would set up an analysis, decision and execution centre at the highest level, which would be integrated and effective and capable of applying the appropriate strategy at the suitable rate to find a way out of the climate crisis.

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