

## CLIMATE CLUBS AND COP21: FOES OR ALLIES? <sup>1</sup>

Etienne Espagne (CEPII)

The UN process of climatic negotiation is often deemed inefficient. The discussions would namely aim at progressively emancipating ourselves from our climatic constraints as pointed up by the scientists of the IPCC (Intergovernmental Panel on Climate Change), to finally reach the defense of national interests in the short term. The negotiation as a whole would therefore result in the smallest common denominator, which, on the global scale of the UNFCCC (United Nations Framework Convention on Climate Change ), inevitably comes down to a very limited output.

The usual approach of international climatic negotiations is that of a “prisoner’s dilemma” with as many players as there are countries. In such a setting, the players collectively benefit from acting against climate change. However one player can choose to profit from the efforts of other countries without himself lowering his emissions (“clandestine passenger” problem). Aware of this issue, most countries prefer to abandon any effort, at the expense of global optimum. This is also referred to as the tragedy of the “commons.”

The temptation then becomes great for certain governments to put in place unilateral or multilateral actions among a restricted number of nations, especially when this type of approach could benefit from support from national public opinions (Bernauer, Gampfer 2015). We call “club” this type of coalition of countries who together decide to accelerate the setting-up of measures aiming at mitigating climate change or adapting to its effects parallel to the incentive of joining the initial group.

---

<sup>1</sup> I wish to thank Simon Lugassy for his kind translation. ( [simonlugassy1@gmail.com](mailto:simonlugassy1@gmail.com)).

This type of approach is increasingly considered as a potential resolve to the blockage of climatic negotiations, which, effectively, bypasses and discredits the UN process that stemmed from the UNFCCC. First, we will see that the idea of climate clubs actually dates as far back as the UNFCCC itself. We will then draw out the theoretical foundations of recent works on climate clubs before offering a classification according to the concerned players. Finally we will bring forward a specific club proposal, coordinating the players of the transition around the social value of carbon, and its potential inclusion to the UN process.

## **1. Climate clubs, the graceful return of an old idea**

The idea that a negotiation conducted by too great a number of participants in order to regulate a global public commodity runs a high risk of failing to fulfill its objectives of coordination is not new. From the Conference of Rio in 1992 through the following years setting-up the Conference of Parties at the UNFCCC (later referred to as COP), it was already clearly demonstrated that a multi-state cooperation on climate change could only be guaranteed if every state benefitted from it and could only be stable through time if the condition of such a cooperation went beyond the matter of global climate, by extending it to a technology transfer protocol for example (Carraro, Siniscalco 1993). The ingredients of country clubs are already present: a group of volunteer countries as well as a strong incentive to join the club, uncorrelated to the climate issue.

The signature of the UNFCCC in 1992 in Rio and the subsequent ritual of the COP gives, however, the impression (if not the illusion) that the Convention acts as the well-meaning dictator dear to the neo-classic economic model<sup>2</sup>. Thus begins the golden age of macro-economic models integrating highly simplified economical and climatic modules, fashioned after the first of the kind, the model DICE developed by William Nordhaus of Yale University (Nordhaus 1993). These models give the illusion of the possibility of a single optimal trajectory of carbon value,

---

<sup>2</sup> [http://www.lemonde.fr/economie/article/2015/06/23/le-dictateur-bienveillant-et-le-climat\\_4660071\\_3234.html](http://www.lemonde.fr/economie/article/2015/06/23/le-dictateur-bienveillant-et-le-climat_4660071_3234.html)

which could be reached only by a global tax system or a global market of emission quotas.

With the signature of the Kyoto Protocol in 1997 at the COP3, this approach almost seemed to work. A global mechanism of emission regulation was adopted, on the basis of a tradable permits market between states. But the Kyoto negotiation did not achieve the control of global emissions it was aiming for: developing countries would manage to be free of any constraint on their emissions, in the name of the principle of “shared but differentiated responsibility.” The American Senate then refused to ratify the Protocol. China, a developing country at the time of the signature, became, in the first decade of 2000, the biggest emitter in the world while still receiving massive financing within the frame of the Clean Development Mechanism, the structural embryo of redistribution from rich countries to “non-Annex 1” nations. Global emissions were therefore only partially regulated from the official start of the Protocol following the ratification of Russia in 2004 up until 2012.

The UNFCCC did not manage to play the part of the well-meaning planner of the DICE model. It was only the reflection of contradictory interests between economies at highly unequal levels of development, who were unable to make similar commitments in the transition towards a low carbon development (Hourcade, Mathy, Shukla 2005). The strategic game between emerging and developing countries can only function if the developed countries consent to important transfers. Such a financial transfer structure only emerged in 2009 following the Copenhagen Conference, despite the fact that Brazil had already proposed it in 1998 during the COP4. But developed countries have also experienced years of weakened growth and political difficulties justifying such transfers (de Perthuis, Jouvét 2015). The UN process then finds itself in a dead-end.

The obstinate repetition of calls for a global agreement on a single carbon price (de Perthuis, Jouvét 2015; Gollier, Tirole 2015), will not solve this structural contradiction. Similarly, models inherited from the DICE model will not deliver the

tools susceptible to break this contradiction (Pindyck 2013). One must analyze, conjointly, the reasons for the COP's repeated failures to provide a more thorough follow-up to the Kyoto Protocol (Espagne 2014) and the difficulties of economy-climate models to clearly discern and describe the links between economical factors and climatic impacts. Maybe then will we be able to bring forth a strategy of alliances aiming at high climatic control over the medium term.

## **2. Climate clubs 2.0, what foundation?**

The return of recommendations from nation clubs in environmental economy research, symbolized by Wiliam Nordhaus' conversion to this idea, is therefore a natural reaction after the disappointment of 20 years of UN negotiations that turned out relatively unfruitful. The different arguments in their favor assume the dispelling of certain hypotheses of the reference model of the "prisoner's dilemma." Through increasing levels of critical analysis, they therefore progressively move from the idea of a "common's tragedy" to that of "climatic co-benefits."

**The first level of criticism rests on the uncertain nature of climate change**, which fatally leads to a failure of coordination efforts on the sole issue of climate. Climate change is indeed susceptible to incur non-linear damages on economies. Put differently, from a certain threshold of temperature rise, economic losses would brutally increase due to particularly violent climatic phenomenon. The fear of exceeding a non-linear threshold is an incentive to transform the theoretically non-cooperative game of international climatic negotiation into a collective game in which the optimum predominates. But this favorable result to a climatic negotiation within UN frames fails as soon as is added an uncertainty concerning the level of temperature increase at which such a threshold is reached, an uncertainty which re-establishes a tendency towards an individualistic strategy (Barrett, Dannenberg 2012). The apparent paradox of a global agreement not to exceed 2°C (theoretically certain threshold) in parallel of the absence of a cohesive collective strategy in order to reach that goal (doubts concerning the level of said threshold) could be explained this way. Here, it would not be so

much the “prisoner’s dilemma” and the risk of clandestine passenger in the absence of agreement causing the failure of negotiation, but the scientific uncertainty concerning the impacts of climate change, which makes the individualistic or club strategy (Barrett, Dannenberg 2014) more appealing for the players involved.

**The second level of criticism admits the impossibility of a constraining agreement for political economic reasons** (and not of a difference of beliefs regarding the effects of climate change, as in the first case). The overly great diversity of development levels, the impossibility of agreeing on the sharing of attenuation efforts, the power of lobbies in place constitute as many valid reasons to consider as realistic such a source of blockage.<sup>3</sup> The negotiators should therefore turn to negotiation strategies other than an agreement on a temperature threshold, such as, for instance, the use of credible threats (trade barriers) for countries refusing to participate in an ambitious climatic coalition. This approach is the one held by William Nordhaus (2015) in a proposition in 2015 aiming at setting-up a club of countries acting against climate change and imposing a commercial tax on imports to other nations.<sup>4</sup>

**The third level of criticism considers that it is namely the framework of the “common’s tragedy” which lead to the failure of regulating emissions on a global scale.** Discussions on the sharing of the “climate burden” (Stern 2015) in the name of the “principle of shared but differentiated responsibility” lead to a dead-end between states and ultimately to agreements lacking actual constraining power, such as the Kyoto Protocol. This criticism brings forwards the mutual benefits associated to the actions of emission reduction, in terms of induced innovation, of pollution reduction and human development (Ürge-Vorsatz, Herrero, et.al. 2014). From there on any coalition of players, any club whose objective consist of the mutual benefits of a reduction of emissions must be seen favorably and even receive support (Stewart, Oppenheimer, Rudyk 2013).

---

<sup>3</sup> The probability that the 2°C threshold will be respected decreases very fast in the current decade (See Fabert, Pottier, Espagne, Dumas, and Nadaud, 2014).

<sup>4</sup> And not a carbon tax on trade, which is considered to complicated to put in place for a limited result as an incentive to join the club.

A great number of small-sized coalitions could even contribute to better climatic policies than the search for a global consensus (Hannam, Vasconcelos, Levin, Pacheco 2015). This new schema of climate policies is *de facto* the most dynamic in the world today, which sees a great number of deals being made on themes in which the topic of attenuation is only a small component, if not an indirect consequence. The initiative of the Climate and Clean Air Coalition launched by the UNDP,<sup>5</sup> the G7 report of June 2015 on fossil fuels, the conjoint announcement of China and the United-States on climate change in November 2014, and the one between Brazil and the United-States in June 2015 participate in the trend of looking for agreements between a restricted number of countries inserting the issue of climate within a larger set of political and economical stakes. This being said, the sum of all the potential mutual benefits from the measures of environmental mitigation crosses the objective of a temperature rise inferior to 2°C compared to pre-industrial times (Calderon, Stern 2014).

### 3. Climate clubs 2.0: which players?

The players of climate clubs can theoretically be of three types: States, corporations or individuals. The choice of one or the other of these players or of any combination between themselves is not neutral on the possibilities of success of a coordinated approach on climate issues. We develop further the three ideal types of climate clubs that these types of players suggest.

**According to the ideal type of Westphalian club, by bringing together powerful enough countries that represent a considerable amount of global emissions, it would be possible to create an ambitious club**, which, by its pulling strength (in terms of commercial sanctions, innovation, military might, etc.), would be capable of bringing with it the other reluctant countries. It is the emblematic approach of William Nordhaus (2015), which rests explicitly on a vision of international relations inherited from the Westphalia Treaties of 1648 to which are generally attributed the fundamental interaction principles between sovereign states.

---

<sup>5</sup> United Nations Development Program.

The Westphalian club does not fit well with the UN process, the latter attaching part of a state's sovereignty through international deals. It is however the UNFCCC process which made possible a great number of important progress in technical fields (REDD measures, CDM, Green Climate Fund, etc.), instigated by essential institutions, whose mere ascent to power and strategic orientation actually default. The Westphalian framework then considers the state as a homogenous unit allowing the establishment of a climatic compromise with other states. Countries undeniably have their own climatic individuality, reflecting preference one could consider as constituent of the economical, social and cultural structure. But one could also form the hypothesis that these specific characteristics regarding climate policies are as much the reflection of the present economical players (consumers, entrepreneurs, dominant economic sectors, among others). The state's preferences in terms of climate policies would then be the reflection of the addition of different economical and social interests.

Therefore, we need to mention the two other ideal types of climate clubs, which we will call Davoisians<sup>6</sup> and Portoalegrians.<sup>7</sup> Indeed, going from the well-meaning planetary dictator to the well-meaning national dictator (which is implicit in all the proposals of Westphalian clubs) cannot solve any better a problem based essentially on a modification of productive structures, meaning a modification of the organization of work and capital in order to include the climatic constraint. We call the Davoisian clubs those that count corporations as essential pivots of transition, above even the will of States.<sup>8</sup> In Portoalegrian clubs, it is individuals, households or social forces that are perceived as the key players of transition.<sup>9</sup>

The attempt at setting-up a carbon tax in France in 2009 shows the extent to which climate policies must account for economic and social players, not to bend

---

<sup>6</sup> We choose this name in relation to the World Economic Forum organized every year among business leaders in Davos since 1971.

<sup>7</sup> We choose this name in relation to the World Social Forum, organized for the first time in Brazil in Porto Alegre in 2001. The WSF has convened civil society organizations every year since then.

<sup>8</sup> In this category, we can quote the « Transition through innovation » report for the NGO R-20 Region.

<sup>9</sup> Many NGO scan be quoted in this category. Let us just mention Greenpeace et the global scale.

to them as it was the case in 2009 with the final abandonment of the project, but to profile and draw potential alliances. It is also permissible to think that this type of alliance of economic and social players has an essential role in international climate negotiations as well (Stewart, Oppenheimer, Rudyk 2013). Considering this, to confer on them an exclusive driving force as Stewart et al.'s proposal does (2013), amounts, inversely, to the Westphalian excess, to neglecting the key role of public power to give credit to any climate agreement and to engage the responsibility of the players involved. The challenge is then to find the right articulation between these three ideal-types: finding the right combination that sources both the credibility of engagement of the Westphalian club, the efficiency in the transformation of productive make-up of the Davoisian club and the creation of a new social fabric as well as the evolution of consumption preferences that characterize the Portoalegrian club. It is the meaning of the proposition presented here.

#### **4. Positive carbon pricing as pivot of a climate club**

According to the definition put forward by William Nordhaus in his article of 2015, a climate club must fulfill the following four conditions:

The major conditions for a successful club include the following: (i) that there is a public-good-type resource that can be shared (whether the benefits from a military alliance or the enjoyment of a golf course); (ii) that the cooperative arrangement, including the dues, is beneficial for each of the members; (iii) that nonmembers can be excluded or penalized at relatively low cost to members; and (iv) that the membership is stable in the sense that no one wants to leave.

In regards to these conditions, nothing decrees that a club be comprised exclusively of states, as Nordhaus then proposes. Let us go through each of these conditions trying to conciliate them with the necessity to articulate the incentives of the three types of actors, as described in the previous section.



It is of course agreed that **the first point refers to the stability of the climate as a public good** to be preserved.

The members of the clubs must include States, corporations and citizens sensitized or interested in actions of mitigation or adaptation. **The benefit of the arrangement between the club's members must reflect the ambition of the most thoroughly implied players while bypassing the numerous possibilities of blockage stemming from existing productive structures.**

According to us, the benefit must come from a certain type of guarantee on the value of the agreed efforts of decarbonization. In order to rationalize this guarantee, we must quantify, and then highlight, the value of the emission reduction induced by each corporate project, and even each change in behavior within the household. This boost of value, which we will call the social value of carbon (SVC), stems from a political compromise between the players of a club. It is therefore not a market price, but rather what one would call a notional price. This social value of carbon serves as an anchor for the financial aid offered to a club's player. This way, a low-carbon project could be partially financed through certificates of emission reduction, highlighted at the level of this SVC. The financial sector would accept these certificates as loan repayments, insofar as their value would be guaranteed by the national public power<sup>10</sup>.

**The non-members are excluded from the benefits of the club insofar as they can in no way receive such certificates of emission reduction.** They are therefore indirectly fined: the financial system will modify its choice of optimal portfolio in favor of low-carbon projects commensurate with the value of the chosen SVC. A direct penalty is added in the form of a real price of carbon, as it is slowly put in place today at a sub-optimal level in an increasing number of countries across the world. This real price of carbon, which reveals itself quite insufficient by itself to

---

<sup>10</sup> See: [http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/bat\\_notes\\_danalyse\\_n24\\_-\\_anglais\\_le\\_12\\_mars\\_17\\_h\\_45.pdf](http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/bat_notes_danalyse_n24_-_anglais_le_12_mars_17_h_45.pdf) and <http://www.cepii.fr/CEPII/fr/publications/pb/abstract.asp?NoDoc=7841> for details on the financial aspects of this proposal for the European Union.

redirect the productive investments in the way of the low-carbon transition, is greatly useful within the framework of our club proposal<sup>11</sup>.

**Belonging to such a club would be stable insofar as it induces an immediate financial advantage.** This advantage diminishes with time, but as the penalty of non-affiliation to the club (the real carbon price) increases, the final outcome remains more or less the same. No member of the initial club has any interest in leaving it, while the benefit of joining the club gets more and more pressing as the real price of carbon increases.

## **5. From Paris to Marrakech, or the inclusion of a club mechanism in the UN process**

It remains to be seen within which diplomatic framework such a club concept could be best integrated; if it requires new collaboration structures or if the existing institutions could suffice. The COP does not hold mandates in financial matters, but it must be noted that COP21 has managed to associate, more than any other, the public and private representatives of the financial system, whether they are ministers of finance who are now part of the negotiation with foreign affair ministers and environment ministers, the financial regulator, or assurance companies, pension funds, banks, and other entities integrated in the COP21 plan through the Lima-Paris agenda.

---

<sup>11</sup> First of all, the subvention to low-carbon activities could not be entirely reimbursable by the fiscal resources from the expected boost of activity, so that it would draw out additional fiscal resources as the exercise of warrantee by financial players wishing to convert their carbon certificates into money. Then, the set-up, parallel to this process, of a classical tax on carbon converging progressively to the level of SVC in the long term would constitute a credible political signal of the temporary nature of the subsidy system allowing to avoid the institutionalization of new income, be it low-carbon. Finally the contingent nature of the emission reduction measure that can be attributed to a concrete individual project makes the articulation of the social value of carbon and a price of carbon indispensable. Indeed, for many low-carbon projects, the full potential of an emission reduction can only be expressed fully in an environment already confronted to a carbon constraint. The thermal isolation of a building contributes better to emission reductions as the households living in it remember to close their windows. They will be furthermore encouraged to do so in the presence of a carbon price, which will overbill their fuel or electricity consumption from a carbon source. This is valid for all sorts of infrastructure implying a behavioral change from the users.

From there on out—and there are already numerous appeals to go this way<sup>12</sup>—the formal framework of the COP21 would be appropriate to build the foundation of such a club structure, without requiring overly advanced technical details. This would come first and foremost through the announcement of a value attributed to the acts of attenuation and to their mutual benefits in terms of adaptation. Once such a value is announced, States would see their announcement of INDCs not only as an international diplomacy constraint, but also as an opportunity to create value.

A new insert in the last version of the agreement protocol negotiated ahead of the Paris Conference in Bonn on October 23, 2015 invites us to do just that, by asking us to “[r]ecognize the social and economic value of voluntary mitigation actions and their co-benefits to adaptation, health and sustainable development.” One hopes to preserve this gain during the Paris Conference in order to then develop it within an autonomized technical framework before the COP22 in Marrakech. Could positive carbon pricing be the pivot that reconciles the COP and the climate clubs?

## References:

- Barrett, S., and A. Dannenberg. (2012). "Climate negotiations under scientific uncertainty." *Proceedings of the National Academy of Sciences*. 109:/43:17372-17376.
- Barrett, S. and A. Dannenberg. (2014). "Sensitivity of collective action to uncertainty about climate tipping points." *Nature Climate Change*. 4/1:36-39.
- Bernauer, T. and R. Gampfer. (2015). "How robust is public support for unilateral climate policy?" *Environmental Science & Policy*. 54:316-330.

---

<sup>12</sup> See for example: <http://www.cepii.fr/BLOG/bi/post.asp?IDcommuniqu=429>.

- Calderon, F. and N. Stern, N. (2014). *Better Growth, Better Climate, The New Climate Economy Report*.
- Carraro, C. and D. Siniscalco. (1993). "Strategies for the international protection of the environment." *Journal of public Economics*. 52/3:309-328.
- de Perthuis, C. and P.A. Jouvet. (2015). "Quelle stratégie financière pour un accord climatique à Paris 2015?" *Revue d'économie financière*. 1:31-48.
- Dutta, P. K. and R. Radner. (2012). "Capital growth in a global warming model: will China and India sign a climate treaty?" *Economic Theory*, 49/2:411-443.
- Espagne, E. (2014). "Trois essais d'économie sur les politiques climatiques dans un monde post-Kyoto." PhD diss., Paris, EHESS.
- Fabert, B. P., A. Pottier, E. Espagne, P. Dumas and F. Nadaud. (2014). "Why are climate policies of the present decade so crucial for keeping the 2 C target credible?" *Climatic Change*. 126/3-4:337-349.
- Gollier, C., and J. Tirole. (2015). "Negotiating effective institutions against climate change." *Economics of Energy & Environmental Policy*. 4/2:5-28.
- Hannam, P. M., V.V. Vasconcelos, S.A. Levin and J.M. Pacheco. (2015). "Incomplete cooperation and co-benefits: Deepening climate cooperation with a proliferation of small agreements." Available at SSRN 2575251.
- Hourcade, J. C., S. Mathy, and P.R. Shukla. (2005). "Cutting the Climate-Development Gordian Knot-Economic options in a politically constrained world." *The design of climate policy*, July.
- Nordhaus, W. (1993). "Optimal Greenhouse-Gas Reductions and Tax Policy in the 'DICE' Model," *American Economic Review*. Vol.83:313-317.
- Nordhaus, W. (2015). "Climate clubs: Overcoming free-riding in international climate policy." *American Economic Review*, 105/4:1339-70.
- Pindyck, R.S. (2013). "Climate Change Policy: What Do the Models Tell Us?" *Journal of Economic Literature*, 51/3:860-872.

Stern, N. (2015, August). "Economic development, climate and values: making policy." *Proceedings of the Royal Society B*. Vol. 282/1812:20150820).

Stewart, R.B., M. Oppenheimer, and B. Rudyk. (2013). "A new strategy for global climate protection." *Climatic change*, 120/1-2:1-12.

Ürge-Vorsatz, D., S.T. Herrero, N.K. Dubash and F.Lecocq. (2014). "Measuring the Co-Benefits of Climate Change Mitigation." *Annual Review of Environment and Resources*, 39:549-582.