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2. International cooperation against climate change: institutions, policies and their efficiency

2.1 Introduction

In the 20th century nature of the world economy has started to change significantly, and the former state-centric constellation disappeared. Several development factors that induced the change are still active and nowadays we live in a much different world. The world economy consists of transnational networks; these complicated systems have a great impact on the world of states. The transnational actors' (multinational corporations, non-governmental organizations etc) influence became very essential as they are able to mobilize the society, have high expertise (think tanks), but it is also important to note their financial strength and moral effects (norm entrepreneurs).

In today's unifying world, none of the regions, countries or any minority groups can avoid the global forces, permanent global changes form the everyday life. Isolated communities do not exist anymore, states penetrate each other, the significance of spatial distances erodes, and everyone is everyone's neighbours (distant, functional neighbourhoods). After John Burton this phenomenon is often called 'cobweb' model of world society, where nearly all of the actors feel the impact of individual decisions.⁸ The cobweb metaphor describes the situation perfectly. It includes the diminishing importance of national boundaries and, also, the system's main characteristic, namely interdependence. Today state-sovereignty is limited, economic and cultural processes exceed the states' authority defined territorially. Furthermore as a consequence of the globalization the traditional distinction between foreign and domestic policy is not possible, therefore the so called "intermestic" concept is introduced. This new system requires strong cooperation between states and non-state actors.

Their collaboration is very crucial as in parallel with the unification of the world problems also turn common, so the humanity faces global issues. The political, economic and environmental cross-border problems affect everyone. For its

⁸ More information: John Wear Burton (1972) World society, Cambridge University Press

severe implications climate change and global warming is one of the most serious issues among other problems. Since the countries potential to solve the environmental problems seems unambiguously limited, the notion of “global governance” must come to the front: cooperation and obligatory international standards are needed.

2.2 Main framework of the international cooperation: UNFCCC

Due to the increased human activities, the concentration of carbon dioxide in the air stepped up since the Industrial Revolution. This phenomenon heavily contributed to climate change. As the problem has become worse and worse, it has turned out that the damage will move further and will result an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and human kind. Counter actions were needed. It was clear that these problems should be handled at international level; countries have to solve the revealed problems together, so a multi-level cooperation. The first international negotiations started in 1979, the international conference on climate change was held in Geneva. In 1987 Montreal Protocol on Substances that Deplete the Ozone Layer came into existence with the aim of reducing emission of chlorofluorocarbons (CFCs). This was the first time when wide range of countries approved an international agreement on the topic (Hardy 2003).

The most important step against climate change was the creation of the UN Framework Convention on Climate Change (UNFCCC) in which there was recorded not only the reasons of climate change, namely greenhouse gas (GHG) emission, but also the possible threats to mankind. Furthermore, the general principles, commitments were codified and a new institutional framework was established for the sake of the cause. After considerable discussions and work the Convention was accepted in 1992, at the Earth Summit held in Rio de Janeiro. Article 2 of the UNFCCC states the Treaty’s goal as “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (UN, 1992).

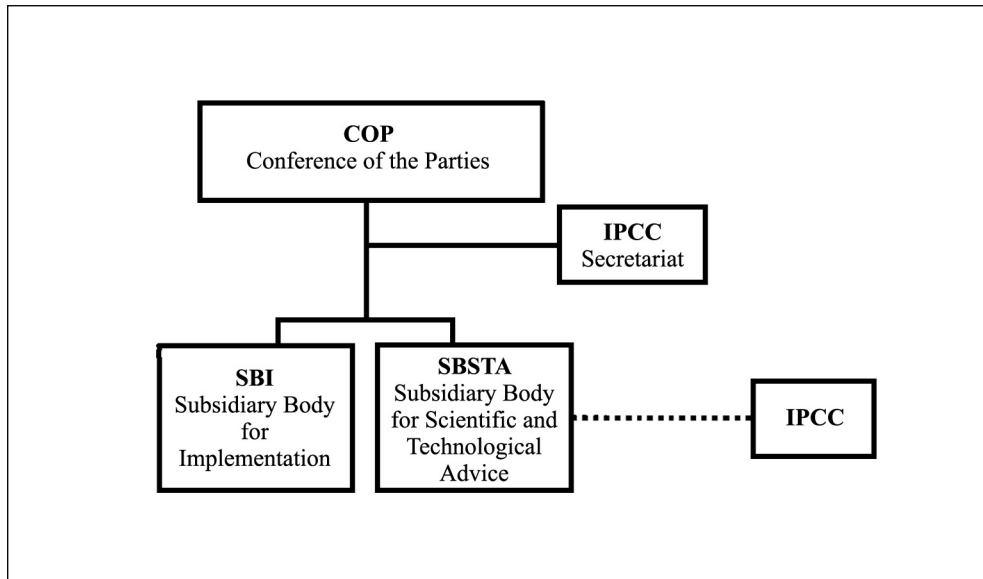
The Convention is a milestone in the history of the international fight against climate change, but it should be recognized that it does not include many specific or concrete target. Beside general objectives the tasks undertaken by Parties are also quite simple. Article 3 strengthens this feature: “*the Parties have a right to, and should, promote sustainable development*” (Ibid). This Convention means only a framework, it has no mandatory limits and it is considered legally non-binding.

The Treaty gave the opportunity for the cooperating Parties to meet regularly, create further action plans and fix targets in protocols. The Parties were classified into different categories. Annex I includes industrialized countries, like members of OECD and transition countries (Former Soviet Union, and Central European States). Annex II mainly consists of OECD members of Annex I, these countries are required to provide financial support to enable developing countries to undertake emissions reduction activities under the Convention. The Treaty has 194 member states now.

As a response to climate change the UNFCCC sets out both *adaptation and mitigation*, while the first form has become fashionable only lately. The Treaty focused originally rather on reducing the source of climate change, so policy on the issue emerged first as mitigation policy. The reason for that is very simple, at the time of writing the Convention; it was widely believed that mitigation is more effective. Nevertheless later adaption projects have also increased in number (Schipper, 2006).

Since the UNFCCC entered into force, the Parties have been consulting regularly in the Conferences of the Parties (COP). The COP is often called the supreme decision-maker body of the Convention, as it monitors the states' efforts and the overall completion of the Convention; and ensures the continuity of the fight against climate change. The first COP session was held in 1995, where the Parties reached agreement on the Berlin Mandate. At that point an ad hoc group was established with the aim of implementing some type of legal instrument to strengthen the commitment of Annex I Parties (Weyant, 2004).

There is another important organization to mention called Intergovernmental Panel on Climate Change (IPCC). The leading international body was created in 1988 by the United Nations Environment Programme (UNEP) and World Meteorological Organization (WMO) to provide in depth technical information about climate change and its consequences. The scientific facts brought up by the first IPCC Assessment Report in 1990 unveiled the substance of climate change. The report contributed to the creation of UNFCCC as from that time on there was no doubt that the topic deserves a political platform. Work of the scientific body is highly respected, while it publishes informative documentations and helps to understand all the relevant issues regarding climate change. IPCC got the Nobel Prize in 2007.

Figure 1 Structure of the UNFCCC

Source: Own construction after the text of the Convention

2.3 Kyoto Protocol

Main points of the regulation

The second IPCC report published in 1995 and the following two years of negotiations has contributed largely to the adoption of the Kyoto Protocol. It was a huge step forward that on the 3rd Conference of the Parties (COP 3) after formal and informal negotiations such an international agreement was adopted which set legally binding targets. The road to the agreement was not free from conflicts as the Parties were on different opinion in many topics. The US wanted to preserve pollutant emission level according to data from 1990, but the European Union supported the idea to reduce it by 15%. The Alliance of Small Island States (AOSIS) called for a radical reduction. Developing countries were not in unity either, while China and India wanted to preserve the 1990's level of emission, from Latin American states' point of view reduction was the only acceptable solution.

Despite debates Protocol is considered a great success because participating nations have committed themselves to tackling the issue of global warming and greenhouse gas emission. Parties included in Annex I undertook collectively to reduce their overall emissions by at least 5 percent below 1990 levels in the five year period 2008 to 2012. This obligation means for them a binding target in terms of a multi-gas index, but the commitments are differentiated by countries. The Protocol named by details those gases which are GHG's. Six types of gases were listed, which means an extension of the category compared to the Montreal Protocol. The reason for that is meanwhile some chemicals revealed poisoning too. The Protocol was adopted on 11st December 1997, in Kyoto, and entered into force on 16th February 2005. As of August 2011, 191 states have signed and ratified the protocol. The only exception is the United States, after the signature, the country have not ratified the Protocol yet. The high participation shows that most of the countries had some sort of bad experience with the issue, so the threat is believed real.

The Kyoto Protocol listed 3 types of flexibility mechanism for implementation. One option for fulfilling their commitments is participating in *emissions trading*. According to the rules the Parties has accepted reduction goals. These targets of the countries for reducing the emission are expressed as levels of assigned amounts. If in a country pollution exceeds this number, it has the right to buy quota from another state. This system is reckoned to be a carbon market, while quotas can be traded like any other commodity.

Second, by the *clean development mechanism* (CDM) a developed country can get emission reduction credits for investing in a project which facilitates sustainable development in developing countries. The mechanism has two purposes: to strengthen sustainability in the host country and to achieve cost-efficient emission limitation by the investor. The second goal can be realized as in a developing country a unit reduction is carried out with a lower unit cost. If such investments create real additional emission reduction, investor countries get so called certified emission reduction units (CERs) depending on the amount of avoided carbon dioxide emission. CER unit is a type of carbon dioxide quota; it entitles the owner to emit 1 ton carbon dioxide equivalent greenhouse gas.

The third opportunity called *joint implementation* (JI) is similar to the second one, but members of the participating countries are different. Under JI a developed country can receive emission reduction credit if it helps to finance specific projects that reduce net emissions in another developed country. As the second mechanism, this solution offers also several advantages: the donor country fulfills its target, the recipient gains foreign direct investment and advanced technology and the atmosphere will benefit also (UN, 1998).

Critics and the Protocol's future

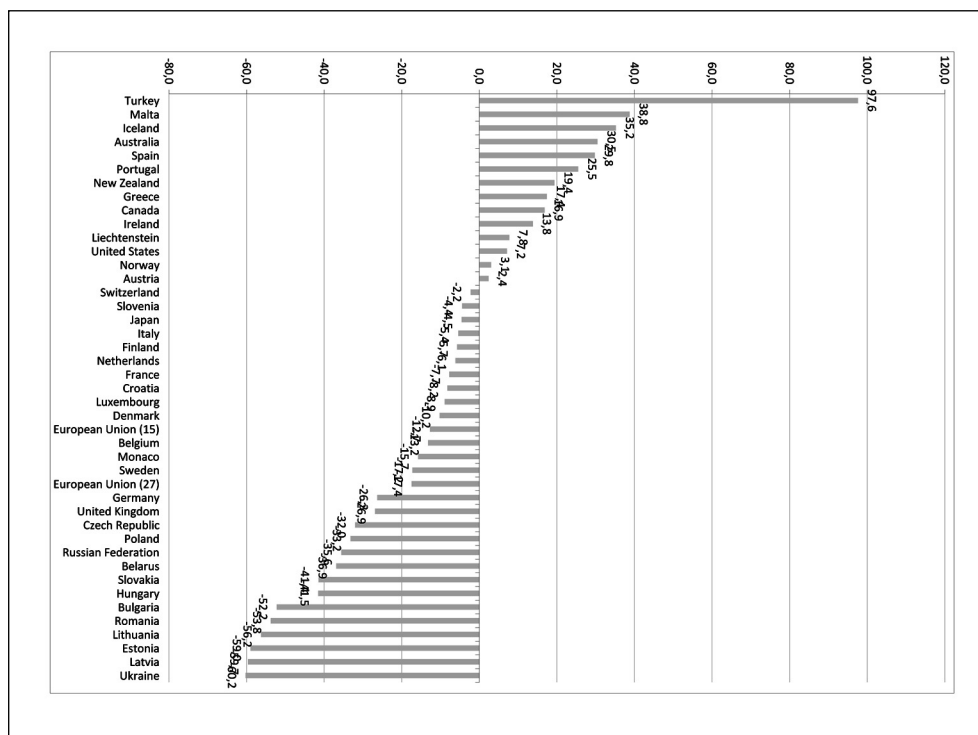
Adoption of the Protocol has a historical significance; nevertheless it has been under a lot of pressure. It has come under attack while it could not stop the increase of greenhouse gas emission. According to critics it has no long term view. It is unfortunate that the regulation covers only a part of the world, developing countries were not involved as responsible Parties, and many developed countries have changed their opinion and refused to comply with the rule (e.g. the United States and Canada). The lack of proper institutional infrastructure has resulted that the initiation can be seen rather as a forum of discussions; it deteriorates the efficiency that there is no strong enforcement and penalty. It is also uncertain how to measure emission reductions and there is no correct monitoring. Based on the opinion of Esty (2008) Kyoto protocol does not have enough economic and legal incentives for global action. He considers that regulations should be developed in such a way that those create economic interests to restrain emissions in participating countries. The regulations are legally insufficient because nobody is accountable for doing damages. The expert therefore suggests that in the future three aspects must be considered: effectiveness, fairness and legitimacy. Jamieson (2010) criticizes the existing system from an ethical point of view. He claims poor countries suffer the most from climate change, those who are less likely to be responsible for the present situation. He expresses his solidarity with them because their will cannot prevail on the international negotiations, great powers dictate the terms.

The efficiency of the Protocol can be reflected by the data, Figure 2 shows different results in the level of emission change. In fact most of the participants performed well above their commitments, so these countries couldn't complete the way they agreed to. However Russia and other transitional economies and some countries that underwent structural changes (United Kingdom and Germany) are exception (Pizer, 2006).

Compared with other solutions many experts questioned the effectiveness of this type of control, since there is no consensus among them which economic tool is the most effective way to handle global warming. Many of them support the carbon tax instead of quantity-type system, arguing taxation is a long standing policy, every country has practice. This kind of indirect tax practically can be seen as a price instrument, while it sets a price for carbon dioxide emission. By using taxation, market price volatility of carbon can be eliminated which is a negative feature of cap and trade system. There are several other advantages of taxation, e.g. it is harder to find a loophole to avoid it, revenues appear immediately in the budget and it involves a lower chance of corruption and violation. Its main disadvantage is that it does not force world economy to reach a certain level carbon dioxide concentration or temperature level (Nordhaus, 2011).

No matter which instrument is chosen by policymakers, its effectiveness can be improved by several tools. Abatement subsidies, tradable emissions allowances and performance standards could be introduced. According to economic analyses technology push policies (like technology and R&D incentives) are very useful because they can lower the cost of emission reducing. More constructive technologies are carbon capture and storage, nuclear and solar technology. Moreover, it is important to start a dialogue between countries in that case, too. They should develop technological cooperation and help each other. The gain from technology spillovers must be emphasized as well, so countries have the task to remove obstacles (Fisher, 2009).

Figure 2 GHG Change from base year (1990) to latest reported year (2009) (%) excluding LULUCF, in Gg CO₂ eq.



Source: UN Statistics, available at http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php

Since the Kyoto Protocol provides rules only for a specific period of time, Parties have begun to build the Post-Kyoto era before the contract expires. On the 13th Conference of the Parties (COP-13) decision was made about the schedule of the negotiations after 2012. Bali Action Plan was adopted and an ad hoc workgroup was formed to conduct the work. A large breakthrough was expected from COP-15 meeting, but because of the different priorities of the countries no progress was made. Copenhagen Summit, in 2009 was a failure (Armeni, 2010); experts were disappointed because Parties could not find a common voice. In fact the opposition of the two great powers namely United States and China has contributed also a lot to the negative outcome. While China insisted on getting financial support, the United States refused the idea that China requires special treatment in the future.

It must be acknowledged that the Copenhagen Accord is only a political statement not eligible to handle climate change issues due to its non-legally binding character. It only calls countries to curb greenhouse gas emission and it does not contain any global long-term mitigation goal. However, the Parties could agree on the further promotion of the developing countries and a new fund was established for them. Despite of the unsuccessful summit in 2009, the continuation could be promising. Though many topics were postponed to the next summit, the reduction goals of Copenhagen Accord could be legitimized in the future and a legally binding agreement can be reached.

Progress assessment and alternatives

Fight against climate change is extremely hard because of its complexity. It is a limiting factor that it can not be determined exactly who is responsible for the emission. As a consequence the polluter pays principle does not work in reality. Therefore, it is necessary to speak about global responsibility but several countries – especially developing ones – are not intend to accept it. The developing countries argue that they have the same right for development, even if their progress causes also massive effects in the environment. Eventually their point of view is acceptable, considering that these countries have started to develop in recent years and they have great lag of modern technologies and welfare. They must dictate the tempo of development if they would like to cope with their social conflicts. Of course, it has some side effects like increasing pollution. For current situation developed countries have a much greater stake of responsibilities due to their activities in 20th century. The available data indicate that atmospheric carbon dioxide concentrations rose from 280 ppm pre-industrial level to 379 ppm by 2005. The rate of growth was uneven, however it has accelerated dramatically in the last 10 years, with the value of 1,9 ppm/yr (IPCC, 2007). This phenomenon generates dispute between newly industrialized and developed countries.

The so-called *north-south conflict* is only one, but important aspect of climate change. Nevertheless, several other issues can be listed. It is a very essential problem that effects of local pollutions do not occur only at the spot of the emission; it has regional and global negative result as well. The fact that climate change already has visible physical and biological consequences causing great harms at one place, while other territories do not have these signs brings another obstacle to the dispute, and limits the chance of a global consensus. Free-rider behavior is typical, specific polluters are less motivated to revise their usual practice. Countries are also influenced by the uncertainty of the future; they tend to think that the problem will never affect them, so they postpone the needed response. According to Mendelsohn (2003), one of the hardest things is to determine the future vulnerability of countries. Experts are attempting to quantify the expected outcome in many areas with simulations, but numbers are often unreliable. According to this, it is better to take into consideration the trends. But to sum up, the officially accepted view suggests that some ecosystems (mountain regions, the dry Mediterranean areas, the low-lying coastal areas) are particularly vulnerable.

The creation of a supranational system of norms (*policy-imposed behavioral change*) is undoubtedly a huge step forward in solving the problem of climate change. It is important to see, that there are some shortcomings of the existing system, therefore introduction of new incentives is inevitable. The issue of climate change requires national response and social mobilization in addition to global collaboration. Decisions of the UNFCCC are based on controversial policies and usually the dominant power wins. In order to limit the role of political interests which have a significant role in hindering the process, the so-called bottom-up principle should be considered and incorporated into the institution. In this context, it would be useful to enhance the interaction between the stakeholders, it must be attained that families, communities get the knowledge of the relevant information. If they can accept it sooner or later the positive attitude will be a part of their national culture. It is important that consumers, producers should become socially sensitive in that case. This requires that scientific knowledge become widely available, education and mass media should pay more attention to climate change. Unfortunately, there is little evidence so far that social mobilization (*self adopted behavioral change*) has been achieved. Many specialists confirm that although the inter-governmental cooperation has been developing and progressing slowly, the population is still very under-informed. If this situation persists, measures taken to reduce carbon dioxide emissions won't be effective.

Table 1 The most prominent NGOs within the climate change debate

NGO	Objective	Year	Origin
Business alliances			
The Global Climate Coalition	to coordinate business participation in international policy dispute on climate change	1989	US
European Roundtable of Industrialists	to strengthen Europe's economy and improve its global competitiveness	1983	EU
Research-based organizations			
The Pew Center on Global Climate Change	to educate the public and key policy-makers about the risks, challenges and solutions to climate change	1998	US
Resources for the Future (RFF)	to provide interdependent, non-partisan research and policy analysis	1952	US
Worldwatch Institute	to inform policy-makers and the public about emerging global problems and trends and the complex links between the world economy and its environmental support systems	1974	US
Wuppertal institute for Climate, Energy and the Environment	to systematically address both the global environmental challenges and the complex task of ecological structural change	1989	Germany
World Resources Institute (WRI)	to move human society to live in ways that protect Earth's environment for current and future generation	1982	US
Campaigning groups			
Greenpeace	campaigns against environmentally damaging activities	1971	Global
WWF	to halt and reverse the destruction of our natural environment	1961	Global

Source: Gough, C. – Shackley, S. (2001) The Respectable Politics of Climate Change: the Epistemic Communities and NGOs, *International Affairs*, 77(2) pp. 341-345

However, certain forms of advocacy system are operating; among others NGOs are very active at the lower levels. These non-profit organizations use to deal with the formulation of policies; they participate in official international meetings, work internationally with government and business leaders, and facilitate talks between government officials, climate specialists, and civil society groups all over the world. Their work is to facilitate the flow of information, and to organize educational events. They play a great role in cutting global emission and accelerating a clean industrial revolution. NGOs' have different profiles, depending on what their mis-

sion is. Therefore NGOs employ different methods, practices, and work on other issues. After Gough – Shackley (2001) three categories can be named. Usually research-based organizations develop creative policy solutions to environmental issues; introduce new concepts, approaches or interpretations. Other organizations', think-tanks' activity refers only to the production of research papers on several topics like biodiversity, extreme weather events etc. The authors of these publications possess great scientific skills, so the output of the knowledge construction institute is recognized to be high quality. Some NGOs operate on very different level, the lobbying and campaigning institutions communicate through media, want to reach the mass, use market techniques to “sell” climate change.

In conclusion, a lot of measures were taken at global level over the past two decades to combat against climate change. Despite these steps it is also obvious that institutions are useless if there is no any constrains for implementation. Progress can be achieved if nations reach consensus and lay down those appropriate rules which help to handle the problem. In that case commitments do not matter, only actual steps are important. Corporate social responsibility also can help a lot to solve the situation. However, result is not guaranteed even if both solution opportunities work, while effects of the steps are delayed and there is a big uncertainty around the scientific methods also.

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