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• ***The Effectiveness Dilemma of the Target & Program Approach in EU Environmental Law,*** Moritz Reese, Helmholtz Centre for Environmental Research, Leipzig (Germany)

Contemporary EU Environmental Law is often using a "target & program" approach. Member States are obliged to pursue environmental quality or performance targets by drawing up and implementing adequate programs of measures (PoM). Prominent examples are the water quality objectives and river basin management regime of the Water Framework Directive, the national emission ceilings of the NEC Directive, the air quality targets and action plans under the Air Quality Directive, the noise abatement plans as provided by the Ambient Noise Directive. Basically, the target & program approach appears well suited as concept of supranational governance as it strives at an equal common level of protection while granting – in line with the subsidiarity principle – an ample margin of discretion for local management of sources, measures, side-effects and burdens. However, the target & program approach is also struggling with considerable implementation deficits for several reasons. First of all, validity and effectiveness of complex PoMs are often difficult to project and control. Target-bound management of diverse sources, sectors and interests is a highly demanding challenge in terms of knowledge, resources, coordination and local political will, and this is often overstraining authorities with very limited capacities. In order to make PoMs work, sufficient legal force of the programs appears essential but this is difficult to establish in legal systems – like the German – to whom such programs are still alien. Last not least, the targets are often subject to vague proportionality caveats making for additional losses on effectiveness. For these reasons, some German scholars have criticized the programmatic approach as running counter essential features of definiteness, certainty and bindingness of public law and thus standing in general tension with the rule of law.
The aim of this contribution is to depict – by abovementioned examples – the inherent weaknesses of the target-program-approach, to discuss regulatory, methodological and organizational means to overcome these weaknesses and to debate in how far this approach should be maintained or even extended in the future environmental acquis of the Union. The main questions and thesis to be addressed to the audience are:

- What is your nation's experience with the target & program approach? Do you see inherent general or only specific sectoral or even no relevant implementation problems?

- How are programs of measures implemented in your national law and how is implementation enforced legally (internal administrative order, externally binding law, subject to judicial review)?

- Do you share the view that the programmatic approach conflicts with traditional concepts of public law and should we not apply somewhat modified concepts of bindingness and definiteness to supranational integration law which is – by its nature – more a law of approximation and process.

• ***Towards an effective programmatic approach: an initial set of recommendations to improve legal certainty, enforceability and adaptability in EU environmental law***, Lorenzo Squintani, Groningen University & Marleen Van Rijswick, Utrecht University (Netherlands)

In a growing number of EU environmental regulatory approaches, especially directives, the EU legislator relies on the so-called programmatic approach to achieve environmental goals. The programmatic approach refers to a plan or programme of measures elaborated by the executive power, eventually in cooperation with the legislative power, explaining which measures will be employed to achieve a given quality standard or emission limit value. Under a programmatic approach, a project is mostly assessed and authorized in light of

the material goal only *indirectly*. Accordingly, generally speaking such an approach allows extra room for flexibility, which can be used to foster economic development, facilitate the adoption of preventive measures and allows for a fair distribution of the internalization of the environmental costs. Moreover, the programmatic approach can enable adaptability, ie the ability of a legal framework to cope with socio-economic or/and environmental developments. On the other hand, the programmatic approach has been accused to affect legal certainty and the enforceability of EU environmental law. On the basis of a comparative method of research our presentation will discuss an initial set of recommendations for the EU legislator on how to make the programmatic approach a more effective policy instrument. More precisely, hermeneutics of law, literature review and case law analysis are used to evaluate the manner in which the programmatic approach has been employed in the fields of ambient air quality, most notably under the Air Quality Directive and the NEC Directive, and water management, most notably under the Water Framework Directive and the Nitrates Directive, from the perspective of legal certainty, enforceability and adaptability.

• ***Changing Patterns of International Environmental Law-Making: Pragmatic Means of Addressing the Causes of Ineffective Implementation***, Owen McIntyre, School of Law University College Cork National University of Ireland, (Ireland)

However we characterise the key elements for measuring the "effectiveness" of international environmental law, it is clear that international environmental regimes must be adaptable so as to allow actors' commitments to evolve in order to pursue ever higher standards of environmental protection and to address new challenges. Conventional regimes tend to be based on framework agreements, which institutionalise cooperation by incorporating institutional machinery capable of elaborating further and more detailed environmental norms and standards, as well as review and learning mechanisms to assist compliance and further normative evolution. Older conventional instruments may also benefit from the "evolutionary interpretation" envisaged under Article 31(3)(c) of the Vienna Convention, or from the principle of "contemporaneity", so that they may be understood in the light of current environmental standards and practices. When one considers the almost universal participation of States in the key global law-making treaties in the environmental field, as well as the pervasive influence of environmental norms on non-environmental treaty provisions, such "systemic integration" can promote a coherent progression towards more effective conventional regimes for environmental protection.
In addition, a reasonably relaxed and innovative approach has been taken to the recognition of the closely related customary rules on which environmental treaty rules tend to be based, due largely to the powerful law-making effect of a wealth of declarative instruments, such as the 1992 Rio Declaration, which rationalise the general principles of law relevant to environmental protection. An increasingly clear and coherent picture is emerging of an inter-related suite of substantive and procedural rules of customary international law. Of course, judicial and arbitral tribunals, as well as highly qualified publicists, play a role in the progressive recognition of customary norms and in the creative interpretation of conventional norms, belying their "subsidiary" status as a source of international law under Article 38(1) of the ICJ Statute.
Quite apart from the traditional and formally recognised sources and forms of international law, international environmental law relies heavily on atypical forms of normativity including, in particular, non-binding soft law instruments, which promote voluntary compliance, facilitate bilateral and multilateral environmental negotiations and provide a basis for the development and interpretation of more specific and binding norms. Similarly, as international environmental law-making often involves the adoption of technically complex rules capable of impacting significantly upon the economic interests of States, the rich infrastructure of intergovernmental specialised agencies and programmes plays a key role in setting law-making agendas and

providing negotiating forums and the technical expertise required to achieve scientific consensus. International environmental law tends also to be procedurally sophisticated, especially where the applicable environmental values overlap with requirements to protect human rights, and environmental instruments are increasingly interpreted and applied so as to require a participative approach. Finally, international environmental law is very often characterised by multi-level governance, with rules adopted and applied simultaneously at the bilateral, regional and global levels, though there is a discernible shift towards the "communitarization" of State activity on a global scale. Indeed, this field of international law is increasingly characterised by new and non-traditional forms of rules, standards and procedures emerging from numerous non-traditional actors involved in the law-making process. Having regard to this phenomenon, Boisson de Chazournes observes that international environmental law 'incites, accompanies and guides expected behavioural changes; it legitimizes new situations, and contributes to the elaboration of a politically accepted language … [a]ll normative means are useful to this end'. This suggests a fluidity in the formation and evolution of environmental rules which functions to enhance their effectiveness.

- To what extent are changing patterns of international environmental law-making likely to render this body of rules more effective in addressing environmental challenges?

- Do non-traditional sources of international environmental normativity present a serious challenge to the traditionally recognised sources of international law and the formal processes for its elaboration?

- Is the proliferation of international environmental rules, emerging from an increasing diversity of sources (traditional and non-traditional), more likely to lead to fragmentation or convergence in international environmental law?

• ***Framework for Assessing Law for Sustainability: Evaluating the Implementation and Impact of Legal Principles,*** Lydia Slobodian, Legal Officer Environmental Law Centre IUCN, Bonn (Germany)

A key component of improving the effectiveness of environmental law is continuous assessment. IUCN is developing a new framework for assessing the effectiveness of environmental law, by tracing the implementation and impact of internationally recognized legal principles. The evaluation method consists of five steps: 1) identifying an internationally recognized legal principle; 2) evaluating whether and how the principle is implemented through national law; 3) evaluating what administrative and government action has been taken to implement the principle; 4) identifying possible behavior impacts of implementation of the principle; 5) identifying possible environmental or social impacts of implementation of the principle.
This paper will explain this newly developed IUCN assessment framework and present case studies of its application by university teams working in Brazil, Australia, China, South Africa and New Zealand. It will also invite discussion on the following issues:

- How can we – and is it necessary to -- mainstream continuous assessment of effectiveness in environmental law research and practice?

- How can we ensure the necessary multidisciplinary expertise (social science, environmental science, etc.) and thorough research given limited timeframes and funding?

- How can we as a community consolidate and coordinate assessment methodologies to build a useful and constructive body of practice?

• ***Limits to the effectiveness of REACH using a life cycle approach*,** Thomas de Römph, KU Leuven and University Hasselt, and Policy Research Centre for Sustainable Materials Management (Belgium)

The REACH Regulation covers the manufacturing and marketing of chemicals in the EU. It is adopted to improve the protection of the environment and human health from risks posed by chemicals, while at the same time enhancing the competitiveness of the chemicals industry. The presentation sheds light on the limits to the effectiveness of REACH using a life cycle approach. It is divided into the following subthemes, which cover several limits each: 1) the industry's obligation to communication down the chain, and 2) the problems with regard to recycling.

Market actors should know the composition of the chemicals they put on the market under the REACH registration requirements. In addition, these companies need to identify, manage and communicate the risks linked to the manufactured and marketed substances throughout the entire life cycle, including the consumers and waste stages. Three limits can be detected. First, there is a lack of taking the cumulative risks into account when assessing and communicating the information. For example, a Safety Data Sheet does not consider the existence of other products posing risks, nor does it incorporate the products' uses that are not conventional. Consequently, the environment and human health are being exposed by more risks than desired. Second, another closely related matter originates from a technical discussion on the exact calculation of the 0,1% threshold for substances of very high concern (SVHCs) that triggers some communication obligations down the chain. More specifically, there is no consensus on *how* to calculate the threshold when the components of an article are themselves articles: either to calculate the concentration of SVHCs on the basis of weight of the whole article or to calculate on the weight of the part of the article containing the SVHCs.[1] A final limit concerns the unavailability of information at the consumers stage. Evidently, when people use products and throw them away, they will not pass on the information to the recyclers. Because most waste facilities do not know the exact composition and risks of the received post-consumer waste, they cannot make use of the exceptions under REACH. Hence, they should investigate the cargos by themselves, which increases costs and efforts tremendously. For this reason, it would not be a stimulus to recycle anymore. Or, as another option, it would encourage recyclers to 'bend' the registration and safety rules or just disregard them altogether.

To build upon the upper limitations, the effectiveness of REACH is further limited by the presence of 'legacy additives' in waste products. Legacy additives are hazardous chemicals that were formerly allowed to manufacture and market because there were no safety rules in place and/or there were no scientific concerns at that time, but they are presently restricted or they need authorisation. Hence, there are still many of these additives around which become wastes sooner or later. REACH basically threw old and new chemicals into one pot, without thoroughly considering the consequence of the intensification of the so-called 'risk cycle'. Because there are many hazardous chemicals present in wastes, legislators need to make a balance that affects the entire chemical chain: either choose to have a high quality chain that does not pose many risks to the environment and human health, but does require more virgin resources; or choose to have a great quantity of recycled chemicals that pose more risks to the environment and human health, but requires less virgin resources. Both arguments could sail under the flag of environmental protection and could therefore be labelled as effective. Equally, they could also be considered *in*effective for the same reasons.

[1] This issue has just recently been addressed by the Advocate General Kokott (opinion to case C-106/14).

• ***Legal approaches to handle combination effects,*** Lena Gipperth, Department of Law, School of Business, Economics and Law University of Gothenburg (Sweden)

Chemicals provide or facilitate e.g. healthcare, food production, consumer products and infrastructure. But their massive use is not only a story about societal benefits. Chemical production and use also has substantial negative impacts on exposed ecosystems and the ecosystem services they provide (food production, drinking water supply, waste degradation, etc.) - on which humanity ultimately depends.

Even modern regulations such as REACH fail to realistically address environmental pollution. They are based on the notion that an evaluated chemical is the only toxicant present in an otherwise pristine ecosystem - ignoring that dozens or even hundreds of chemicals co-occur at the same time in every exposed body or the environment. This is particularly problematic because even low, individually harmless concentrations might add up to a severe mixture toxicity.

Chemicals in the environment are hence a typical case of the "tragedy of the common good": even if the impact of each individual chemical emission is neglectable, their combined effect is not. Consequently, exposure to chemicals from multiple sources and activities breaks the causal link from the actions of an individual company or consumer to the ecological status of an ecosystem. This dilution of causality, and hence responsibility, is the Achilles heel of current chemical regulation.

At the 2002 World Summit on Sustainable Development in Johannesburg, countries agreed that by the year 2020 "*chemicals should be produced and used in ways that minimize significant adverse impacts on human health and the environment*". Different policies and institutional tools have been developed to counteract negative effects from the production and use of chemicals. Most legal tools focus on the actor's perspective. Chemical control and management are adapted to an individual activity, e.g. chemical production in a company, or to a specific substance, e.g. a pesticide, which is controlled and enforced case-by-case.

If requirements are shown to cause an unacceptable effect in the environment, the legislator or an authority needs to act and replace or adapt them. REACH (EC/1907/2006) and the Industrial Emissions Directive (2010/75) are examples of this type of actor-oriented legislation. Their common limitation is their complete focus on one single actor (chemical, activity, process) at a time, completely ignoring co-occurrence and interactions in the real environment.

A second set of legal instruments takes the reactor's perspective: they focus on assessing and safeguarding the quality of natural resources (air, water, soil, etc.). The Water Framework Directive (2000/60/EC) and the Marine Strategy Framework Directive (2008/56/EC) are examples of reactor based approaches. Their main instrument is the environmental quality standard (EQS) which specifies a toxicant's concentration in the environment that does not jeopardize an environmental goal, e.g. the "non-toxic environment". Although such reactor based approaches in principle allow to address the problem of chemical cocktails, their current implementation leaves a lot to be desired: in practice, EQS values are set (again) only for individual compounds.

This paper will present how combination effects of chemicals (coctails) are considered in current EU legislation and discuss policy options on how the common emission space, i.e. the total load of chemicals that can be emitted without causing harm, can be shared fairly. Focus will be on how actor- and reactor-based regulations can be made more fit-for-purpose, by acknowledging and acting upon the complexity of pollution found in the environment. Three questions to be discussed with the audience:

- What principles should guide the division of "chemical emission space"?
- Could EQS be designed in order to consider combination effects?
- Is there other legal or policy options to more efficiently consider combination effects?

• ***Evaluating Waste Management: How Effective are Regulatory and Policy Frameworks in Supporting Industrial Symbiosis?*** Katrien Steenmans, University of Surrey (United Kingdom)

There is a growing waste crisis requiring urgent action as a result of the amount of waste produced and to be managed. Simultaneously, humanity's demand for resources is unsustainable. Industrial symbiosis provides one possible strategy to address these issues.
Industrial symbiosis engages traditionally separate industries and other organisations in a collective approach involving physical exchange of waste and by-products resulting in economic, environmental and social benefits. Such benefits include, for example, reduced use of virgin raw materials, decreased greenhouse gas emissions and job creation. Despite industrial symbiosis complementing and supporting current policy aims and political agendas of, *inter alia*, sustainable development, green economy and circular economy, it is not yet widely implemented within the European Union (EU). This paper evaluates and compares the effectiveness of regulatory and policy frameworks supporting the initiation and sustainment of existing industrial symbioses. The focus is on the EU environmental regulatory and policy frameworks, with particular attention on solid non-hazardous waste and by-products. In evaluating the effectiveness, this paper addresses the following questions: (1) What is effectiveness?; (2) How to evaluate effectiveness?; and (3) How does effectiveness vary between the case studies as a result of differing regulatory and policy frameworks? The evaluative criteria of effectiveness are determined by focusing on objectives, which requires identifying and selecting objectives for the first research question, deciding how to measure achievement of objectives under the second research question (including indicators to be used), and thirdly a comparison of two EU case studies to demonstrate the application of the chosen interpretation of effectiveness and the benefits of using evaluation research. These benefits include using evaluative criteria as a measure to evaluate the effectiveness of transposition and implementation of EU law. The two selected case studies of industrial symbiosis are: Kalundborg in Denmark, which is the seminal example of industrial symbiosis, and the Humber Region in England. Other case studies will be examined in further research. An empirical, mixed-methods approach is employed for this research. This research combines case study research, interviews, evaluation research and the comparative law method. The contribution of this research is using the evaluation of effectiveness in order to provide recommendations as to how industrial symbiosis can be effectively initiated and sustained using regulation and policy.

• ***Ecological Connectivity Protection according to The European Union and Polish Law***, Kamila Sobieraj, Piotr Zacharczuk, John Paul II Catholic University of Lublin (Poland)

With increasing amounts of land being claimed by humans for agricultural purposes and urban development, the area of habitats most valuable to wild fauna and flora is being limited, while existing habitats are being divided into small, isolated patches. One of the biggest threats to many animal species' survival is the progressing fragmentation of their natural habitats by diverse human activity resulting in the emergence of ecological connectivity problem. The existence of species requiring greater living space and freedom of movement in fragmented environments is possible only due to the presence of wildlife corridors, which ensure ecological connectivity between suitable habitats and thus provide shelter, access to food and, above all, genetic diversity essential for animal populations. The absence of wildlife corridors is in turn the major factor that limits the natural range of wild species, including the wolf.
Maintaining ecological connectivity is at present one of the biggest challenges the modern nature conservation in EU Member States faces, as one of the elements of European integration is creating a powerful transport infrastructure network connecting first of all the EU Member States. Therefore, the

European Commission adopted so called Trans-European Network Strategy. The network was supposed to play the key role in the integration of European internal markets by making the flow of passengers and goods passable (providing a free flow of people and goods). On the other hand, however, implementation of the network very adversely influences the wildlife flora and fauna in Europe. Very frequently, transport infrastructure, especially the enclosed roads, create barriers that make it difficult for many species to migrate and spread. As a result, the wild fauna populations, especially of mammals of high dispersion reach and low density, are increasingly more isolated, and the continuity of habitats ensuring at least low level of genetic exchange becomes endangered. Natural habitat fragmentation is considered to be the most significant factor contributing to the decrease of biological diversity in Europe.
The authors aim at presenting the essential legal acts imposing upon the EU and Member States the obligation of ecological connectivity among the staging places of large migratory predators, which is necessary to assure the proper condition of those populations. The authors undertake the issue of the Polish system of legal regulations in that respect aiming at implementation of the international and EU obligations. The authors also intend to identify and systematize some barriers, which appeared in the practice of applying the regulations regarding protection of the ecological corridors. Elimination of those barriers may increase the efficiency and effectiveness of the protection system. „The source" (beginning) of the protection problem are very often ineffective legal regulations already at the international and EU level (there is often a necessity to „precisely interpret" the obligation to establish and protect the ecological corridors. The regulations do not create a complex system of protection, but they are "independent", "scattered" regulations), thus it is hard to expect the national law or instruments might bring the anticipated effects. The factor which considerably reduces the effects of implemented protection for many predators is the absence of effective implementation of proper instruments for protection of ecological connectivity among the staging places of many large predators, and also lack of creation and implementation regarding the complex European system of ecological corridors, which might be an instrument of EU obligations fulfilment within cooperation of the member states regarding the protection of many migratory predators in the border belt areas.

- How the progressing fragmentation of natural habitats may by counteracted?

What activities resulting in effectiveness enhancement of ecological connectivity may be undertaken?

• ***The role of public participation for the effectiveness of environmental law***, Wolfgang Köck, Helmholtz Centre for Environmental Research, Leipzig (Germany)

Legal theorists of administrative procedural law analyze the administrative procedure as a "mode for the realization of the law" (Rainer Wahl). That means, that the procedural steps are fundamental to find the administrative decision which is in compliance with the law. Relating to environmental protection public participation (pp) in administrative decision making plays more and more a major role. Pp support the competent authority to determine the potential and expected impacts, helps finding the different interests and a balance between them, implements the right to a fair hearing, gives protection of the rights of persons affected by a project (they should have an influence on the procedure and the result of the procedure), serves common interest, improves the effectiveness of public administration, and strengthen the acceptance of administrative decision making.

In my presentation I will start with a short overview about public participation and other forms of public decision making (citizens' decision making), and the purposes and objectives of pp. In my second part I will

analyze the European approach of public participation in environmental decision making and the relationship to the third pillar of the Aarhus convention: access to justice. In my third part I will comment German experiences with pp, focussing on two issues: the ECJ-Altrip case (C-72/12), and the "Stuttgart 21"-debate which leads in Germany to a rethinking of pp.

- Public participation plays a major role for the effectiveness of environmental law.

- The EU environmental law was very important for establishing the participation approach into the law of the member states.

- For some member states, especially for Germany, the access to justice-pillar in the Aarhus

- Convention and their transformation into EU directives was very important for strengthening procedural rights in decision making.

- The ECJ Altrip-case and the lessons learnt from the "Stuttgart 21"-Desaster leads to a new thinking of procedural rights, esp. of pp. in Germany.

• ***Citizens engagement in renewable energy: Negotiating energy transitions***, Birgitte Egelund Olsen, Aarhus University School of Business and Social Sciences, Department of Law (Denmark)

Renewable energy objectives are a vital component of energy policies in many countries around the globe. However, despite the pressing need for renewable energy and the proven technological capacity of a number of renewable energy sources, most countries are struggling to replace their carbon dependent energy systems with more renewable sources.
This presentation deals with one central factor in successful renewable energy policy development and facility siting: adequate and appropriate citizen involvement in wind energy projects. The siting of renewable energy facilities is often a matter of local authority and in particular the siting of wind power facilities has proven to cause problems for local authorities. This is mainly due to the nature of wind energy. Wind power facilities are characterized by numerous local sources scattered across the landscape, as opposed to the past's few but large energy plant projects. Furthermore, renewable energy facilities have been introduced in areas that have not previously been exposed to these facilities.
Experience shows the importance of citizen involvement in the transition to low carbon energy systems. Despite the existence of a wide range of measures which aim, directly or indirectly, to protect the neighbors to large renewable energy facilities from their adverse effects, the fact is that renewable energy projects are increasingly confronted with local opposition which delays and sometimes even wholly prevents their implementation. As many renewable energy developers and local governments have experienced local opposition should not be taken lightly, it has proved to be incredibly effective in stopping developments both the well-developed and planned project and the ill-conceived proposals.
Undoubtedly, citizen involvement performs an important civic function in modern society. Thus, citizen participation plays an imperative role in making sure that the most optimal decisions are made. The perspective that citizen involvement is synonymous with opposition should therefore be abolished and instead the term should guide the development of new processes and incentives to engage local citizens. The effectiveness and sophistication of the groups questioning specific projects or in general opposing to wind

farms seem to grow, thus making it even more important that not only developers but also policymakers and local governments becomes likewise sophisticated in their views of opposition and their regulatory tool box to prevent that the salutary citizen involvement develops into an over-emphasis on the negative impacts of the projects on individuals and the local communities.

- citizens engagement and the promotion of wind energy by looking at the current system of incentives and regulations, including the authority to mitigate adverse impacts, in particular visual impacts

- the role of citizens in the planning and implementation of renewable energy projects, including how involvement can turn into opposition and how opposition supposedly can be managed productively

- the development of a framework for the cooperation between local authorities, renewable energy developers and local citizens to promote the transition to renewable energies with a more adequate and appropriate citizen involvement.

- the presentation will build on research of Danish and US cases in particular.

• ***Effectiveness of participation of the local community and local authorities in the decision making in Renewable Energy***, Tilak Ginige, Bournemouth University (United Kingdom)

Climate change and energy dilemma are two most serious problems facing our world today. The European Union (EU) has put in place various legal instruments to help the member states tackle this multifaceted problem. Renewable energy (RE) projects are considered to be one of the vehicles to enable states to combat the above mentioned environmental issues and at the same time satisfy the EU legal targets. The UK has established policies and legislation to implement RE projects and to involve the public in the decision making process of these projects. There are however, conflicting views on the question of public participation in RE projects, on the one hand, it is suggested that it will promote more democratic decision-making process, on the other hand that public participation will delay projects from taking place. It is argued that the public should be involved in RE projects since these projects are not only of national significance, but are also closely related to local community interests. There are two approaches to develop renewable energy projects: build large infrastructure RE projects from national level (top-down) and encourage local RE projects (bottom-up). However, research suggests that there are flaws in the UK legislation with regard to public participation in respect of both approaches. This paper will look at the participation of the local community and local authorities in the decision making process in RE projects these two approaches. Furthermore the purpose of this article is to suggest possible ways to promote active societal involvement in renewable energy projects which will facilitate more public acceptance and support of RE projects.

• ***Public participation in environmental decision-making and Marine Spatial Planning and Coastal Management,*** Ines Roncha, University of Coimbra (Portugal)

If public participation in environmental decision-making is widely accepted as an advantageous concept, being even referred, as conceived in the Aarhus Convention, as an Human Right, how it can be operationalized though, is yet far from being a settled matter. When it comes to Marine Spatial Planning and Coastal Management, the question is even more complex due to the different organization of property rights.
Nevertheless, the matter has been subject of interest of both the European Union (EU) and Member States, and an ecosystem-based approach is to be implemented. Due to the interdependency between resources and users, the success of such an approach will largely depend on the engagement of stakeholders, which reflect different contexts and expectations. The answer seems to rely on the stakeholder analysis, identifying *who* should participate, and also *when* and *how*. Is the EU legislation enough and, especially, adequate for the promotion of Public Participation? And what to say when it comes to Member States? In this paper is proposed an analysis of public participation under the EU environmental legislation, with special emphasis to the Directive 2008/56/EC, establishing a framework for community action in the field of marine environmental policy and the recently approved Directive (EU) 2014/89/EU, establishing a framework for maritime spatial planning, concluding that in terms of Public Participation provisions, the latter has provided no significant progress. It is also proposed a brief comparative analysis of two national legal frameworks and experiences (United Kingdom and Portugal), when it comes to public participation in marine spatial planning, reflecting different stages in implementation but similar approaches.

• ***The balance between public and private regulation within PES: a key to effectiveness?*** Adélie Pomade, Catholic University of Louvain (Belgium)

Payments for Ecosystem Services (PES) consist of remunerating someone for the continuation or the implementation of a virtuous practice with regard to biodiversity. They tend to be considered as market-based instruments in the economic literature. Their design and implementation are as diverse as contexts in which they are developed. Some of these instruments are subject to extensive public regulation, some are only subject to private regulation, and between, all combinations of public and private regulation can be observed. Whereas public regulation refers to unilateral norms enacted by public authority, private regulation can be considered as any voluntary norm negotiated and adopted by private and/or public parties to a PES, such as in private contracts.
According to the growing literature and case studies on the topic, actual PES schemes seem to show various degrees of effectiveness – i.e. their ability to reach their biological and economical goals. However, it seems that a 'pure' public regulation doesn't ensure effectiveness of PES as well as a mix between public and private regulation, while other factors may influence their performance.
Three case studies highlight these observations: the Vittel case in France, the agro-environmental scheme in Belgium and Costa Rica's PES programme. For each of these case studies, it appears that the intervention of the public authority in the design and implementation of PES can only partly contribute to their success.
Two main results emerge. First, the legal analysis suggests that a gradient model of public intervention could have a positive effect on the success of PES. This results from the comparison between mostly private PES like in the Vittel case, where the whole process has been voluntary and mainly governed by private contracts between the beneficiary and producers, and mainly public-driven PES, like the agro-environmental scheme in Belgium, based on subsidies paid for predefined sustainable farming practices.

Second, an important factor of effectiveness of PES schemes seems to lay in the intensity and the quality of the normative framework of the mechanism, rather than in the public or private nature of the regulation.

- The link between normative framework and effectiveness
- The hypothesis of a gradient model of public intervention
- The balance between public and private regulation within PES schemes (and more generally market-based instruments).

• ***EU Policy Mix for Forest Regulation: Interpreting Effectiveness***, Yelena M. Gordeeva, Hasselt University (Belgium)

Global forests continue to decline at an alarming rate of more than five million hectares per year, i.e. more than 140 km^2 per day.[2] The negative environmental impacts of deforestation may be exemplified by biodiversity loss, soil degradation, increased likelihood of extreme weather events (storms, floods, and other natural hazards). The main reasons for the forest loss globally include: lack of good governance;[3] national policies that distort markets and encourage the conversion of forest land to other uses; inadequate cross-sectorial policies and some other reasons.[4]
Contrary to the global deforestation and forest degradation tendency, the EU forests have continuously expanded for over 60 years.[5] That allows for an assumption that the EU environmental law and policy instruments represent an effective mix for forest regulation. Indeed, forests remain a Member State competence and there is no provision for a common EU forest policy in the Treaties of the EU. Nevertheless, forests are a significant and an essential element of several existing and developing EU policies relating to agriculture, climate, energy, nature, water and soil, etc.[6] Additionally, there is a number of hard, soft and private law instruments concerned specifically with forests: EU Forest Strategy (2013); EU Timber Regulation (2010); FLEGT Regulation (2005) and forest certification. These instruments all contribute to what is seen as a mix for forest regulation that exists today in the EU. Some of such instruments are relevant not only to the Member States, but have significant international implications (e.g. legality requirements for forest products in the EU; legally binding renewable energy target; etc.). Up until now there has been some research into the effectiveness of one or another particular EU legal instrument with regards to forests.[7] Scholars also examine public regulatory instruments adopted at domestic level.[8] However recent legal studies on the effectiveness of environmental law show, that in most cases, it is not just one optimal instrument, but a

[2] Food and Agriculture Organization of the UN, *Global Forest Resources Assessment 2010*, 2010, p. XVII.
[3] More on the fragmented and uncoordinated international forest law, see Y. M. Gordeeva, "International Forest Law: Current State and Possible Future Prospects", to be published in M. Ivshin, A. Skutnev (eds), *the Current Trends in International and Russian Law,* 2015.
[4] Food and Agriculture Organization of the UN, *State of the World's Forests 2012*, 2012, pp. 16-18.
[5] European Commission, *EU Forests and Forest Related Policies*, http://ec.europa.eu/environment/forests/home_en.htm , last viewed 16 March 2015.
[6] For a preliminary review of the EU forest law and policy instruments, see Y. M. Gordeeva, "Investigating Main Trends of the EU Forest Law and Policy Development", *Current Perspectives on Russian Law*, 2014, 12, p. 2934
[7] Y. Levashova, « How Effective is the New EU Timber Regulation in the Fight against Illegal Logging ", *RECIEL*, 20 (3), 2011, pp. 290-299; K. Dooley, S. Ozinga, "Building on Forest Governance Reforms through FLEGT: The Best Way of Controlling Forests' Contribution to Climate Change?", *RECIEL*, 20 (2), 2011, pp. 163-170; Y. M. Gordeeva, " Wood Biomass Sustainability under the Renewable Energy Directive ", *in* L. Squintani, H.Vedder, M. Reese and B. Vanheusden (eds), *Challenges and Approaches in Energy Transition in the EU*, 2014, pp. 47-63; European Commission, *State of Implementation of EU Timber Regulation in 28 Member States*, 06 March 2015.
[8] L. Ventrubova, P. Dvorak, " Legal Framework for Payments for Forest Ecosystem Services in the Czech Republic ", *Journal of Forest Science*, 58, 2012 (3), pp. 131-136. Y. M. Gordeeva, W. Hensen, " International and National Forest Law (Flemish Region, Kingdom of Belgium), Contemporary Issues in Law ", *Proceedings of the XXIX International Scientific Conference*, 2013, pp. 72-86.

combination or a mix of various hard, soft and private law instruments, which provides for a desired environmental outcome.[9] Thus, the present investigation focuses on the interaction of the EU forest law and policy instruments with a view to interpreting the presumed overall effectiveness of the EU mix for forest regulation.

The investigation first establishes why forests are regulated in the EU (sets a scientific background for the following legal discussion). Secondly, the paper briefly describes the existing EU law and policy instruments relating to forestry. Thirdly, it identifies patterns of interaction and influence between various instruments. The aforementioned interactions may be taking place on a conceptual level (i.e. do the instruments employ a common understanding of "Sustainable Forest Management") or a regulatory level (is there a shift from suasive instruments towards command-and-control? Does the emergence of the 2010 forest legality regime imply there is a shift of the governing centre from private regulation back to the EU and the states?)

Finally, the article examines whether these interactions have a positive or negative impact within the EU forest governance (are there conflicting or complimentary instruments?) and, could the EU mix for forest regulation be called an effective? (does it raise the level of forest protection in the EU? and does it contribute to the global efforts of reducing deforestation and forest degradation rates?). Conclusion brings the findings of the investigation together.

• ***Smart Mixes in relation to Transboundary Environmental Harm: Forest Governance as an Example***, Jing Liu, Erasmus University Rotterdam (Netherlands)

The increasingly complex nature of transboundary environmental problems, such as global warming, deforestation, fish stock depletion, marine pollution and biodiversity loss, pose a fundamental challenge to policy makers worldwide, namely that of enhancing the effectiveness of global environmental governance.

Recent decades have witnessed the prevalence of various public, private and hybrid governance regimes as well as the diversity of governance instruments adopted by these regimes. These governance regimes and instruments are not functioning in isolation, but have intricate and diverse linkage with each other. Literature has attempted to analyze the interactions between the variety of regimes, with the focus on the governance architecture and the key actors involved. Less attention, however, has been attached to the interaction between specific governance instruments. This paper tries to make a first step in bridging this gap in research, by combining socio-legal and law and economics approaches to answer the questions: *how do the governance instruments interact with each other and how do the interacted instruments contribute to alleviate transboundary environmental problems? In other words, are the instrument mixes used in practice smart and under what conditions, smart mixes can be achieved?*

This paper will be structured as follows: the first section provides an introduction to the background and research question (1).

Section 2 *presents an analytical framework to evaluate the smartness (coherence and effectiveness) of instrument mixes, with a view to enhance policy design and implementation* (2). This analytical framework follows a five-step approach. The first step is to identify the environmental problems, to introduce its status and characteristics and to analyze the drivers for them at different levels (a). This will be followed by step two: a short picturing of the governance instruments in response to the environmental problems and drivers. Among these instruments, some key instrument mixes and jurisdictions will be chosen for further analysis (b). In step three, how instruments interacted with each other at policy design and implementation stages is

[9] For an overview of the effectiveness of various environmental policy instruments, see M. Faure, " Effectiveness of Environmental Law: What Does the Evidence Tell Us? ", *William and Mary Environmental Law and Policy Review*, 36 (2), 2012, pp. 293-336.

analyzed. The discussion of interaction will focus on three levels: the output level, the behavioral level and impact level. The dynamism of interaction is also incorporated when relevant (c). Based on the examination of interaction, the step four is to evaluate the smartness of instrument mixes against the criteria of coherence (the compatibility of goals and rules; the compatibility of behaviors that instrument aims at steering and the existence of coordination) and effectiveness (the influence on human behavior, impact on the environmental status and problem solving)(d). The final step is to draw lessons from the study: on which situation, a smart mix can be achieved (e).
Section 3 *uses forest governance as an example to illustrate the analytical framework discussed above (3)*. Specifically, it will analyze the interaction between public regulatory instruments with forest certification in four forest-rich countries, which have different regulatory capacity and are in different stages of forest transition: North America, Sweden, Bolivia and Indonesia. This section will examine the interaction and evaluate their coherence and effectiveness with the analytical framework presented above. Based on the comparative study, a few factors influencing the smartness of instrument mixes for forest governance will be identified.
Section 4 concludes (4).
This paper is based on the research for the project "Smart Mixes in relation to Transboundary Environmental Harm", and falls into the subthemes of 1 (definition and assessment of the effectiveness), 2 (designing effective policy mix) and 4 (analyzing also the interaction in implementation stage) of this conference.

• ***The regulation of "new" technologies in the European Union – is effectiveness at all possible?*** Leonie Reins, University of Leuven (Belgium)

Within the last two decades, several "new" technologies have been emerging in the European Union's energy and environmental area. Amongst these were the Carbon Capture and Storage technology, which aims at, as its name suggests, capturing CO2 from large point sources (power plants) and transport it to a storage site to depose or store the latter in underground geological formations, the nanotechnology which manipulates or fine-tunes materials at atomic, molecular and macromolecular scales and most recently the shale gas hydraulic fracturing technology to extract gas from deep ground shale formations.
While all these technologies were - and to some extent still are - perceived to be new, the regulatory approaches to these technologies differ. The regulatory design debate regarding nanotechnology was, at least in the beginning, characterised by a cooperative approach between industry, non-governmental organizations and the general public. Action on a European level includes a European strategy for nanotechnology, a European action plan, a common definition established though a Recommendation and a code of conducts. However there is no specific legislation on this matter. Of course, the general health, safety and environmental legislation, such as the REACH Regulation, the Plant Protection Directive, and the so called "new approach on technical harmonisation and standardisation" legislation (especially regarding machinery, personal protective equipment, low-voltage, medical devices, etc.) and more sector specific regulation on for example cars, medical products, food or cosmetics applies.
The discussion surrounding the CCS technology on the other side resulted in the adoption of binding legislation. The CCS Directive 2009/31/EC amendments the Water Framework Directive, the Waste Directive and several other Directives. The European Commission itself promotes that "*although the*

components of CCS are all known and deployed at commercial scale, integrated systems are new, and a clear regulatory framework is required. The EU's CCS Directive provides this."[10]
The most recent "new" technology is the shale gas hydraulic fracturing technology. The shale gas debate in the European Union is characterised by the classical opposition of industry, NGOs, etc. A non-binding Recommendation outlining minimum principles is the only specific regulatory approach so far. As such shale gas is considered to be a "new" technology. However, one can question if the technology (and its impacts) is really new and uncertainties are associated with the activity or whether it is rather the likeliness of the impacts which are at question.
The regulatory approaches taken so far to "new" technologies is thus far from being coherent and also not effective for the most part. The overarching emerging question is if this is due to the very nature of the technologies or if the problem lays within the European regulatory approaches taken towards the regulation of new technologies. The presentation will analyze these trends in EU regulation on new technologies and establish why they have been ineffective for the most part. It will focus on questions such as "where is the "soft" in soft law?" and "where is the "new" in new technologies?" and how this matters for the effective regulation of these issues (?).

• ***International Climate Change Law After the UNFCCC: Preparing for Failure,*** Navraj Singh Ghaleigh, University of Edinburgh (United Kingdom)

Even the most optimistic interpretations of the recent Lima COP do not hold out much optimism for a multilateral agreement in Paris 2015 that meets the demands of the science. Of the many approaches to the in/effectiveness of the Climate Regime, scientific plausibility is the ultimate criterion of efficacy, closely followed by its capacity to meet its own objective (UNFCCC Article 2).
Although the IPCC and other international bodies speak with every greater clarity and urgency on the scale and depth of the climate problematic, to date the UNFCCC process has
not managed to generate binding law to avoid a climatic crisis.
Nor will it do so in any likely near-future scenario. One of our foremost Panglossians, EU climate commissioner Miguel Arias Canete, appears already to have given up hope of an meaningful agreement in Paris.[11]
Has therefore international law 'run out of rope'?
Perhaps, but before coming to that bleak conclusion other international regimes and tools
Must be considered, including international human rights, environmental impact assessments, Law of the Sea Convention, trade law, Energy Charter Treaty, UN Watercourse Convention, and ICJ Advisory Opinions. Each will be assessed jointly and severally, leading to the conclusion that not only is there no silver bullet, above all, international litigation is not it.
There is no alternative to negotiation but those negotiations do not have to be restricted to the UNFCCC process. One approach would be to argue that climate action should be on the negotiating agenda of all international institutions whose 1 mandate is affected by it.
This of course raises risks of fragmentation but also opportunities for coordination and cooperation across the international system. Above all, climate change is to important to be Left to the Climate Change Convention.[12]

[10] European Commission, DG CLIMA, *Ensuring safe and environmentally sound CCS*, http://ec.europa.eu/clima/policies/lowcarbon/ccs/index_en.htm , 22 may 2014
[11] S. Goldenberg and A. Neslen, "Paris Climate Summit: Missing Global Warming Target 'Would Not Be Failure'" *The Guardian,* London, 4 February 2015.

A second approach would be to recognize 2015 as the appropriate time to deemphasize the UNFCCC and take more pragmatic steps. Foremost amongst these would be a refocusing of International efforts on the keys issues – coal, and China – following Helm.[13]
With these two issues at the forefront, the prospects of avoiding 2C warming by 2050 become feasible. A Convention on Coal, phasing out coal combustion and negotiated in the G20 framework, would substantially solve the single most critical challenge facing the climate, that is, the coal's prominent *high carbon* place in the global energy mix.
Moreover, there has never been a more opportune time for such an agreement. Shale gas has made coal substitutable in the US, and China has such immense public health and social problems associated with coal burn, it is likely persuadable on the medium term phase out of coal powered electricity generation. The EU, by its own legal regime has similar such plans, and remaining G20 States could be expected to fall into line. Further, the energy economics are promising. The global abundance of gas provides a currently existing transition fuel, and CCS offers a technology to further drive down emissions.
Accordingly, a Coal Convention provides a realistic and effective means of moving from our current high carbon strategy to a mid-level one in the medium term, and a low carbon pathway in the long term.

- What mechanisms would best ease the transition? (The paper will argue in favour of a carbon tax, against ETS.)

- How to achieve legitimacy when over 80% of nations are not party to the agreement? (Focus on output not input legitimacy.)

- How to finance CCS? (EOR/EGR, not ETS.)

- Are we measuring the right thing in territorial emissions? (Consumption emissions are considerably more just, and effective)

• ***International Climate Finance and Non-State Actors: the Transparency Imperative,*** Patricia Jonason, Södertörn University, Stockholm (Sweden), & Richard Calland, University of Cape Tow (South Africa)

International Climate Finance, which is directed towards financing climate change mitigation and adaptation programmes – has entered a watershed phase, with especially high expectations on the newly established Green Climate Fund (GCF). Ahead of the Paris COP21, to be held in December 2015, the GCF has begun to gain traction and to capitalize, with $10bn already pledged, towards the Copenhagen COP15 target of $100bn per year by 2020. For the long-term sustainability and credibility of such international climate finance funds, and their efficiency and effectiveness, the transparency and accountability of the funds will be critical. Consequently, without a mechanism for monitoring how financial resources put in the funds are raised, allocated, and spent wisely, appropriately and accountably, the future of climate finance may be jeopardized. In recent years, international development financial institutions (DFIs) such as the World Bank have made great strides in establishing an operational transparency principle and the practice of access to information disclosure policies. Climate finance funds, such as the GCF, have a lot to learn from the experience of the

[12] A.E. Boyle and N. S. Ghaleigh, "Climate Change and International Law: Beyond the UNFCCC" *in* K. R. Gray, C. P. Carlarne and R. Tarasofsky (eds), *The Oxford Handbook of International Climate Change Law,* Oxford University Press, forthcoming 2015
[13] D. Helm, *The Carbon Crunch: How We're Getting Climate Change Wrong --- and How to Fix It,* Yale Universiy Press, 2012.

DFIs. The Climate Finance matrix has a significant multi-sector dimension, which complicates the picture: the funds are 'non-state actors', but with member state membership and accountability (such as the GCF's accountability to the UN's COP); but with private as well as public sources of finance (for example, the GCF proposes to have a 'private sector window'). This mixture of different kinds of actors, with different kinds of funds, presents unique challenges for transparency and access to information. The right of access to information has historically been established, conceived and implemented for information held by the state, directed towards the 'vertical', one-dimensional relationship between the government and its citizens. Consequently, extending the right of access to information to information that is held by non-state actors constitutes a paradigm shift on various fronts and raises a certain number of questions, such as: (1) The question of the meta-rationales of the right of access to information: in other words the question of whether the traditional meta rationales for the right of access to public-held information – the rationales in terms of the rule of law as well as the deliberative policy-making rationale – are adequate or if other kinds of rationales are applicable? (2) The question of the shift from a liberal approach to human rights protection which focuses on a vertical relationship between the 'weak' citizen and the 'omnipotent' state, to a 'horizontal' approach that can accommodate the complexity of multi-sectoral and multi-actors; (3) The question of the shift from a traditional liberal approach regarding the private sector which placed a great premium on the sanctity of the private sphere and had a traditional preference for secrecy over openness to a 'de-sacralisation' of the private sector. Thus, the paper aims firstly to contribute to the further development of the academic, theoretical literature on the extension of the right of access to information held by non-state actors, in the context of International Climate Finance funds. Additionally, the paper aims to in a broad-brush manner examine a number of national and international legal regimes, so as to identify mechanisms appropriate for extending the right of access to information held by non-state actors in the international climate finance sphere. Hence, the paper will assess how an adequate framework on the right of access to information held by non-state actors may be developed and executed, and how such a framework can contribute to increasing the transparency of the Climate finance funds and therefore the legitimacy and sustainability of those funds in helping the world to respond to the grave threat posed by climate change.

• ***Climate change action seeking for effectiveness: Cities networking and its legal implication,*** Julien Dellaux, Aix-Marseille University (France)

Cities count for more than the half of the world population, cover the main flow of goods and people, and produce about 80% of anthropogenic greenhouse gas emissions. As such, they have a huge factual responsibility in climate change, and represent a key territorial level for climate action. Their key role was recognized for a long time as local authorities have been recognize as one of the 9 major groups identified by the Agenda 21 in order to implement commitments from governments[14], and more recently by the COP of UNFCCC[15], CBD[16], and the final statement of Rio+20[17]. The Agenda 21 called for "*increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities*". This cooperation had already started two years earlier at the first world congress of local government for a sustainable future where the ICLEI was founded by more than 200 local government from 43 countries. This initiative has been joined by other cities networks as C40, and movement as the covenant of the mayors launched by the European Commission. Influence of sub-national government on global

[14] It recognized that "*the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives*". *Agenda 21*, Chapter 28.
[15] Decision 1/CP.16, *The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*, para. 7.
[16] Decision X/22.
[17] *The future we want*, para. 42, 2012.

warming policy and their cooperation has already been noticed and qualified as "green paradiplomacy"[18], a term which could be used as well to qualify actions from cities network.
These network offer various opportunities for cities to exchange between them but also to influence global environmental governance. We could distinguish five field of activities: technical (methodology and tools for MRV), development (capacity building programs), informative (exchange of information, experience, as well as replicable cases), transparency (registry for GHG emissions), and decisional (normative instruments: covenant, pact, charter). Theses institutional framework producing normative instrument, sometimes providing for reporting and sanction in case of non-compliance, reveal new kind of legal orders. They offer new track of influence for cities.
This article proposes to analyse these cities networks, their normative products, and the compliance tools they use. It aims to explore how these networks offer new possibilities of influence for cities, and how their actions complement States' ones, thus making climate change regulation more effective. We aim to show that cities networks produce two kinds of normative effects: horizontal and vertical ones. The first kind of effect encompasses internal influences between cities while the second one corresponds to external influence of the network. Global environmental governance is built as a complex of overlapping legal orders at the international level. But this stage is also complemented with international networks of subnational government, and we nowadays face a multi-level governance[19]. The study will be based on an analysis of official documents, with a special attention toward norms adopted and their circulation between networks, and with intergovernmental negotiations under the auspice of the UNFCCC, in order to assess an influence. We will also analyse how these norms complement and are adopted due respect with COP decision, and thereof how they render climate change regime more efficient. Cities networks also raise major issues about legal statute of cities in international law. Local government as public authority acting at the international level raise the question how to apprehend cities network in international law, and impose to clarify their competence at national level. These legal issues could be obstacle of cities action and we intend to identify them in order to assure effectiveness
of the global multi-level climate change governance.

- What could be the legal hindrances to cities network actions: blurred competence at national level?

- How to legally qualify acts adopted by cities networks? And could they be legally linked with national commitment?

- Does these networks impose theoretical shift in international law about legal subjects?

[18] A. Chaloux, S. Paquin, "Green Paradiplomacy in North America : Successes and Limits of the NEGECP", *in* H. Bruyninckx and al. (ed.), *Sustainable Development and Subnational Governments : Policy-Making and Multi-Level Interactions*, Houndmills, Palgrave Macmillan, 2012, pp. 217-236.
[19] M. Acuto, "Global Cities: Gorilla in our midst", *Alternatives*, vol. 35, n°4, pp. 425-448; M.M. Betsill and H. Bulkeley, "Transnational Climate Change Governance", *Global environmental politics*, Vol. 2, n°9, 2009, pp. 52-73.

• ***Assessing Climate Preparedness: Indicators for Effective Adaptation to Climate Change in Dutch Vulnerable Sectors***, Herman Kasper Gilissen, Utrecht Centre for Water, Oceans and Sustainability Law, Utrecht University (Netherlands)

The Dutch delta is increasingly dependent on well-functioning interdependent and interlinked infrastructure networks and other vital sectors (e.g. energy, ICT, transport, healthcare). These critical sectors are highly vulnerable to climate related disasters and incidents, such as floods, extreme precipitation, storms, and extreme droughts. Recent developments in adaptation policy – for instance those within the framework of the Delta Program – show increasing attention being paid to managing the risk of societal disruption and social/economic loss due to climate induced network failure. As a next step in these developments, the Dutch Cabinet – encouraged by the Commission's European Adaptation Strategy (2013) – inter alia aims at increasing the adaptive capacity of vulnerable sectors by virtue of the adoption of a comprehensive National Adaptation Strategy (NAS) by 2016.
In a background study for the NAS, an interdisciplinary Utrecht University team of legal and governance experts (among which the abstract's author) laid the foundation for a methodological tool to assess the degree of 'climate preparedness' of vulnerable sectors. A key indicator for climate preparedness was 'expected effectiveness', defined as the extent to which those who bear responsibilities for adaptation within a sector are expected to implement adaptation measures in such ways that climate risks are reduced to acceptable levels. Subsequently, a (non-exhaustive) list of indicators was presented for assessing expected effectiveness. Responsibilities, for instance, should be comprehensive, explicit, transparent, and legitimate. There, moreover, should be a high level of climate awareness and a sense of urgency within a sector, and adaptation responsibilities should not only encompass recovery-oriented (reactive) measures, but also prevention-oriented and mitigation-oriented (proactive) measures.
The proposed presentation and paper will further elaborate on the above. The main aim of the presentation is both to give insight into as well as to discuss the assessment tool, the concept of effectiveness, and the indicators for effectiveness. To this extent, the presentation best fits within the Conference's *first* theme. However, also some preliminary findings of the application of the assessment tool for three network sectors (i.e. electricity, internet, and inland navigation) will be presented. To that extent, the presentation also fits within the Conference's *second* and/or *fourth* theme, as the assessment tool, after all, was especially designed to monitor the implementation of adaptation responsibilities, as well as to formulate recommendations for improving the (expected) effectiveness of certain norms.

• ***Adopting an ecosystem approach based paradigm in environmental law***, Elina Raitanen, University of Turku (Finland)

Despite several multilateral environmental agreement regimes dedicated wholly or primarily to tackling aspects of biodiversity loss, human activity keeps causing massive extinctions to biodiversity and biodiversity loss continues to occur at an unacceptably high rate. One major reason for the regulatory attempts to fail in halting biodiversity loss is the contemporary positive regulatory structure, which is originally built on anthropocentric premises to exploit and commodify nature. Consequently, the laws to protect interconnected and uncertain environmental matters have been formulated under a sector-based, rigorous approach taking into account technical data - without a full understanding of the environmental problematic and of ecology. From the perspective of biodiversity this means that there are many other laws than just those specifically known as "biodiversity laws" whose goal achievement is essentially connected to biodiversity preservation. Therefore this artificial fragmentation often leads into inefficiencies and problem-

shifting. Additionally, the contemporary ecological understanding emphasizes constant transformations in - and various inter-linkages and interdependencies between - ecosystems whereupon the rigid, front-end built laws show significant inconsistency with their object.
My suggestion is that these two major legal challenges need to be met - not only to succeed in halting the continuing biodiversity loss – but also to contribute to the ongoing debate about the maturity of environmental law. Also, since the contemporary ecological paradigm shows fundamental inconsistency with the legal one, this study seeks to consolidate the tension by proposing operationalization of ecosystem approach based paradigm in laws relating to natural resources governance. Accordingly, an adoption of more adaptive and precautious laws and a further creation of linkages in and between regimes contributes to a more coherent and adaptive management of natural resources. Therefore, the goal of the thesis is at a general level to find out what kind of restrictions and opportunities these development desires face within the legal framework.
In analyzing the opportunities and restrictions to operationalize ecosystem approach paradigm to answer the two major challenges discussed above, this study adopts a critical legal-dogmatic perspective. The analysis is critical in a sense that it questions the tenets of the existing framework and instead seeks to understand how law influences – or fails to influence - the environment from a systemic point of view. In my paper I will examine the normative basis of ecosystem approach and discuss how this approach embodies the contemporary ecological paradigm and how this understanding is already reflected in environmental law and discipline. I will also scrutinize how the existing regulatory failures to halt biodiversity loss can be combatted by operationalizing ecosystem approach based paradigm in relevant laws.

• ***The rise of the 'substitution principle' in EU environmental law : a key to enhancing sustainable development effectiveness and justiciability ?*** Charles-Hubert Born, Catholic University of Louvain (Belgium)

The recent attention paid to the mitigation hierarchy ('avoid-minimize-offset' environmental impacts), in particular in the context of the forthcoming no net loss policy of the European Commission, tends to renew the interest in the under- discussed 'substitution principle', also referred to as the 'eco-proportionnality principle'. Under this principle, competent authorities should assess and consider reasonable alternatives – including the 'zero' alternative – before taking a decision harmful to the environment. The adopted option should be the one having the least negative impacts on the environment. It is, in other words, a particular application of the proportionality principle and, more specifically, of the 'test of necessity' in decision-making.
The environmental provisions of the EU Treaties and the constitutional recognition in many Member States of the right to a healthy environment and the sustainable development goals give a firm legal ground for courts to recognize the substitution principle. In positive law, the growing number of legal instruments providing for substitution obligations – e.g. hazardous substances regulation, species and habitats protection or environmental impact assessments –, are all signs of the emergence of this principle as a general principle of environmental law.
Its extended application by lawmakers and administrations would enhance the effectiveness to the concept of sustainable development, as it would force these authorities to avoid and minimize the impact of their decisions on all dimensions of sustainable development, especially the environment. The double nature, both procedural and substantive, of the substitution principle would give the public the opportunity to challenge decisions in which ecological, economic or social impacts are disproportionate to the objectives pursued.

In our opinion, such a principle has the potential to strengthen the 'preventive' side of the ‘mitigation hierarchy’, especially if it is implemented through active land policy likely to expand project location alternatives.

• ***The effectiveness of compensatory measures: the case for habitat banking,*** Valérie Dupont, Catholic University of Louvain (Belgium)

Although biodiversity offsets have existed since the 1970s, it has had an unpreceded uptake for the past several years with 45 programs in place and 27 in development worldwide by 2011 (Madsen et. al. 2011). For many governments, such mechanisms represent a mean to reconcile biodiversity conservation with sustainable development. Although a growing number of European (Directives 85/337/EEC and 2001/42/EC Environmental Impact Assessment, Habitat Directive 92/43/EEC, Directive 2004/35/EC Environmental Liability) and national laws suggest or impose biodiversity offsets, no comprehensive framework exist for the design and implementation of biodiversity offsets, whether at the European or national level. As a result, most compensatory measures occur on a case by case basis, with little coherence, efficiency, and consistency. Questions have arisen as to the effectiveness of biodiversity offsets, whether they are truly implemented by developers who must compensate their impacts, whether they reach their ecological goals, and whether they are maintained in the long run.
In the United States, similar issues have led the development of a market-based approach to implement wetland compensatory measures in the United States: the Wetland Mitigation Banking program. Instead of implementing their offsets themselves, developers can buy mitigation credits that have been generated ex ante by specialized institutions or companies with positive actions on biodiversity (creation, restoration, enhancement, or preservation of wetland). Historically, compensatory mitigation measures were often inadequately conceived, poorly or not executed, and infrequently monitored. As a result, many mitigation projects failed, jeopardizing the credibility of the whole program. Wetland Mitigation banking was developed as a response to the failure of permittee-responsible offsets. In term of effectiveness, it includes a number of advantages in comparison to case-by-case arrangements. Offset projects are developed ahead of a possible negative impact on the environment, hereby reducing the risks of environmental failure. As compensatory measures are pooled, it also allows economies of scale and reduces the administrative costs of monitoring and enforcement. If strategically placed, mitigation banks can finally contribute to public biodiversity strategies, enhancing the effectiveness of compensatory measures.
Despite those advantages, wetland mitigation banking raises many risks and has its share of critics. A major obstacle to the creation of mitigation banking lies in the difficulty of establishing a methodology for evaluating and determining a currency. Another difficulty lies in the evaluation of environmental performance and the determination of net gain obtained. Finally, the motive of entrepreneurial bankers is not entirely pure. Because their major objective in entering the market is to make profits, they may be tempted to double-count their credits or reduce costs at the expense of quality. The United States has therefore put in place strict rules to ensure effectiveness of wetland mitigation banks. For instance, most credits can only be sold once the compensatory mitigation project has reach specific ecological performance standards, real estate mechanisms must secure the site in the long run, monitoring and reporting framework must be agreed on and an endowment fund must be created for the long term financing of management actions.

- Based on the United States experience, which legal safeguards ensure effectiveness of habitat banks?

- Should similar safeguards be applied to compensatory measures implemented by developers themselves, whether for major or small projects?

• ***Private property and markets in environmental goods: the case of the 'conservation covenant',*** Bonnie Holligan, University of Sussex (United Kingdom)

The proposed paper responds to moves in a number of jurisdictions to provide for environmental obligations which can function as burdens on land.[20] Such obligations are essentially private and personal arrangements, but when made in the public interest for purposes of environmental preservation they can, in some jurisdictions, be enforced against subsequent owners of the land.
In the UK context, the paper focuses on the English Law Commission's recommendation in 2014 that a new form of positive land burden, the "conservation covenant",[21] should be introduced to English land law. Do conservation covenants represent infiltration of property law by concerns of environmental protection or co-option of environmental protection discourse by property rights? To some extent both propositions are true; my research in this area explores the differing values across the regimes of private property and environmental law and considers whether it is possible or desirable to reconcile their various aims and objectives within a single legal institution.

The paper analyses the Law Commission's proposals within the current political context, and the potential role of conservation covenants in "biodiversity offsetting" – a policy promoted by the current UK government. "Offsetting" usually involves the mitigation of an environmental harm through the securing of an equivalent environmental benefit, I locate this as part of a wider move towards the financialisation of nature, and the promotion of the concepts of "ecosystem services" and "natural capital" , I consider the tensions inherent in the proposed covenant mechanism between the need for stability and certainty and for flexibility with regard to decisions surrounding land use and highlights a number of points where the requirements of a property-based approach and environmental protection imperatives conflict. The various public interests which may be involved in the conservation covenant make it difficult to apply the principles which would usually govern a covenant between private parties, for example in relation to modification and discharge.

It is argued that conservation covenants may well be useful if confined to a purely private role in the ordering of land use, but there are significant problems with the use of conservation obligations as a basis for offsetting schemes or markets in environmental goods. The argument against the development of markets in biodiversity is a political one, but the dangers in replacing publicly accountable processes with private action are manifold. Private law should not be used to sidestep important public decisions about land use.

- How can property norms be used for purposes of environmental protection? In particular, which structures and institutions of property law can be used to ensure that conservation obligations "run with the land" (are enforceable not just against the party who created the obligation but subsequent owners of the burdened land)?

[20] See for example the English Law Commission, *Conservation Covenants* , Report n° 349, 2014; and the discussion at para 2.56 of the position in various common law jurisdictions. For discussion in the French context, see Commissariat Général au Développement Durable, *Sécuriser des engagements Environnementaux: Séminaire d'échange sur les outils fonciers complémentaires à l'acquisition,* n° 82, 2013.
[21] In some US states a similar mechanism is known as the "conservation easement".

- What role do or might "conservation covenants" (or equivalent land burdens) play in establishing markets in environmental goods and in compensatory mechanisms such as "biodiversity offsetting"?

- Is it possible to reconcile the differing values across the regimes of private property and environmental law within a single legal institution such as the conservation covenant?

• ***Shift from Road to Rail According to the Swiss Constitution – About the (In-)Effectiveness of 'Overprotective' Norms,*** Markus Kern, University of Fribourg (Switzerland)

In 1994 the majority of the Swiss voters and the cantons have adopted a new constitutional norm providing that "Transalpine goods traffic shall be transported from border to border by rail" (art. 84(2) Constitution [Const.]). In combination with the prohibition to increase the capacity of the transit routes in the Alpine region (art. 84(3) Const.) this provision set the basis for a major change in Swiss transport policy towards a regulatory framework geared towards sustainability and environmental protection. During the following years the new transalpine rail link was planned and is currently being constructed, a road toll for heavy vehicles was introduced and a whole range of additional measures have been taken in order to achieve a substantial shift from road to rail. The provision can therefore be taken as an example of a far-reaching protective norm, whose implementation raised a whole series of questions related to effectiveness – and indeed continues to be a topic of intense political discussion.
In practice already the transposition of the constitutional standard to the level of statutory law proved to be difficult. After lengthy discussions it was finally decided to implement a legislative target to reduce the number of heavy goods vehicles crossing the Alps to 650'000 annual crossings. In this context the question arises if the goal set on the statutory level is actually in conformity with the constitutional standard, since the latter provides that transalpine goods traffic should take place by rail; furthermore, it remains unclear what margin the constitutional provision would leave for a different design of the goal or for a higher (and therefore less restrictive) goal. More generally it can also be asked what lessons can be drawn from the specific formulation of the constitutional norm at stake, given its far-reaching or even radical character when it comes to its implementation in practice and thus its effectiveness.
As for the first question, it seems that even though the target is not in conformity with the wording of the constitutional provision, requiring a shift to rail for all heavy goods vehicles in transit, it is nevertheless congruent with its objective, given the fact that in exchange for not imposing a complete ban on transit transport, it extends the application of the objective also to import-, export- and inland-transport crossing the Alps and is therefore in line with the rationale of the constitutional provision. As for the margin to further alleviate the target, the constitutional standard seems not to leave much room. Given the fact that in 2013 – ten years after the legal shift-target should have been achieved – still 1'143'000 transalpine crossings were counted, the question of the effectiveness of both, the constitutional provision and its implementation on the statutory level is inevitable. In this respect it is fair to say that the constitutional provision has achieved a considerable number of changes in policy, regulation and infrastructure-planning and has actually become a decisive element of Swiss transport policy. At the same time, the fact that the quantitative objective has not been achieved seems to undermine the force and the legitimacy of the constitutional provision in the sense that in practice it can be observed that the efforts to attain the goal have hardly been increased. It therefore seems that due to the fact that the provision has not achieved its objective in time, its binding force and possibly its "reputation" have suffered. This may, more generally, be one of the possible downsides of (overly) protective ambitions.

- How should effectiveness be measured in this context? Is it the (full) achievement of the target of the norm or rather a move into the direction that the protection is directed at?

- How should the trade-off between achievability and ambition of a norm be struck, when it comes to ensuring effectiveness?

- Does this assessment change in the case of provisions that have to pass a constitutional referendum, with the consequence that the rather far-reaching or radical formulation of the provision may (or may not) increase the probability of its acceptance?

• ***On the effectiveness of Germany's Renewable Energy Sources Act***, Sebastian Strunz and Erik Gawel, Helmholtz Centre for Environmental Research, Leipzig (Germany)

The paper evaluates the effectiveness of the main policy instrument to support renewable energy sources (RES) in the German electricity sector, i. e. the RES Act (*Erneuerbare-Energien-Gesetz*). To do so, the analysis proceeds in several steps. First, a conceptual specification between effectiveness and cost-efficiency is necessary. While effectiveness relates to achieving politically set goals, cost-efficiency is a more demanding concept because it requires goal achievement at a minimum of costs. Second, the main goals and instruments of the RES Act are laid out. In particular, the paper analyzes the diverse set of regulations that is meant to contribute to the four overall objectives of energy policy in Germany: security of supply, environmental protection, economic efficiency and social acceptability. For instance, the substitution of fossil energies through RES is supported via a differentiated scheme of feed-in tariffs for RES; the latter, in turn, is financed by a levy on electricity prices – a rather complex mechanism due to a number of exemptions. Third, the paper investigates in what respect the RES Act can be considered "effective" legislation: does the RES scheme conduce to the four objective(s) of security of supply, environmental protection, economic efficiency and social acceptability? And does it do so in a way that minimizes costs? In order to assess the costs of policy intervention, a comprehensive approach is applied; that is, the analysis not only considers financial costs but also non-monetary costs in terms of environmental and spatial externalities, grid extension and stability issues as well as acceptance problems.
Specifically, the following hypotheses are explored:
a) the RES Act has been very successful in terms of increasing the share of RES

b) the RES Act has been partly successful as regards minimization of the direct financial costs

c) the RES Act has been relatively successful as regards minimization of costs from a comprehensive

d) perspective that takes the consequences of RES deployment on ecosystems and both grid extension and grid stability into account

e) the RES Act has been partly successful in terms of securing public acceptance
Overall, the evidence seems to provide broad support for hypothesis a). In fact, it might be argued that the very success of rapid increases in RES deployment lead to unintended side-effects, thereby inhibiting cost-minimization in several respects: for instance, the degression schedule for the photovoltaic feed-in tariff did not keep pace with the speed of photovoltaic cost reductions (b). Similarly, the spatial repercussions of

accelerated RES production capacity extensions (in terms of effects on ecosystems and on grid capacity and stability) were not sufficiently anticipated (c). The lack of appropriate spatial regulation, in turn, yielded public acceptance problems concerning the location, the extent and even the necessity of new wind farms, transmission lines and pumped storage reservoirs for hydro power plants (d).
Against this background, the paper asks for adequate regulatory responses that might help to minimize the different cost categories associated with RES deployment. In conclusion, the paper delivers a set of policy recommendations for the next reform to the RES Act.

• ***Promoting electricity from renewable energy sources in France: is French law appropriate to reach the goals?,*** Marie Lamoureux, Aix-Marseille University (France)

As many of her neighbours in Europe, France has ambitious goals for the development of renewable energies and, especially, for the development of electricity production from renewable energy sources. Before the EU imposed her a target of 23 % for the share of energy from renewable sources in gross final consumption of energy in 2020, France imposed herself this objective, and the future "Energy Transition Act" will soon increase the goals. Nevertheless, as a matter of fact, France has in some ways a specific position, due to the importance of the civil nuclear industry, which, at the present time, represents the major part of electricity production.
But, beyond the important political debates on the respective places of nuclear and renewable energies in the French electric mix, this raises the question of the juridical tools to use to promote renewables in good economic conditions, as French law expressly requires. If specific tools have been created, the question of their ability to reach the goals remains. We have to admit that, for now, the development of renewable electricity in France suffers from juridical barriers, such as excessive complexity and instability. Furthermore, French law has to deal with European rules, especially regarding State aids, and will need to reconsider the ways to support the promotion of renewables.

• ***Administrative and/or Criminal Enforcement***, Jan Darpö, Uppsala University (Sweden)

In most countries, enforcement of environmental law relies on both administrative and criminal legal instruments and organisations. Some countries – such as the UK – traditionally emphasize criminal enforcement, although in an English way; the Environment Agency has police powers, is the chief prosecutor on the area and the criminal liability is said to be "strict". Administrative tools for enforcement, e.g. "civil sanctions", have developed quite recently and only to meet increasing criticism of the criminal system as being ineffective. In other countries – such as Germany and the Scandinavian countries – enforcement of environmental law traditionally is undertaken with administrative means, such as orders, administrative fines or undertakings on behalf of the responsible party. In those countries, criminal enforcement is reserved for the serious breaches of environmental law and it carries mainly a "symbolic value". However, in all countries – irrespective of how the choice is made between administrative and criminal enforcement – there is an ongoing and quite intense debate about the shortcomings of the impact of environmental law "on the ground" and the weaknesses of sanctions when breaches are found.

Recent years, the awareness of the need of effective enforcement of environmental legislation has also been raised on EU level. Even though "better regulation" wind still blows strong on the area, there is also a breeze towards "stronger regulation" and "stricter implementation". Provisions about criminal sanctions are passed, both as a general piece of legislation and through scattered provisions in directives and regulations. Recommendations about environmental inspections have been developed, and minimum standards are commonly regulated in different sectorial legislation. *However, little attention has been paid to the relation-ship between administrative and criminal enforcement.* This is quite surprising, as it can be regarded as a key factor for the effectiveness of the legislation. But also from the perspective of the addresses of the legislation, there is a need to analyse this relation. Both CJEU and ECtHR have namely in recent case law highlighted the protection of human rights when authorities use administrative orders and sanctions, both in relation to the prohibition against self-incrimination and through the "ne bis in idem" doctrine. Double sanctioning can occur in the encounter between administrative fines and criminal sanctions and self-incrimination can be actualized when authorities ask for information that may reveal breaches of environmental legislation.

- Administrative supervision basically relies on cooperation between the authorities and the operators, its main instrument being advice. In contrast, criminal enforcement rests upon repression and sanctioning. Can the emphasising of effective enforcement and the increased formalization of environmental administration actually lead to less cooperation and more conflict with the addressees of the environmental legislation and therefore a weaker implementation..?

- Taking the different roles of the supervising agencies and the criminal authorities (prosecutors) into account, how can a fruitful relation-ship be developed between these branches of the environmental administration in order to improve an effective implementation and enforcement of environmental law..? Is a strict division between those two functions preferred, or shall we affirm the development towards increased police powers to the supervisory authorities..?

- A strict application of the ne bis in idem doctrine can lead to a conflict between criminal sanctions and administrative fines and other kinds of sanctions. As shown above, also the prohibition against self-incrimination can be complicated to handle in for the environmental agencies. What are the experiences of such conflicts between principles of environmental law and the protection of fundamental rights and freedoms and what solutions have been chosen in order to avoid them.

• ***Civil, administrative and criminal sanctions in Cyprus***, Natalia Charalampidou, Ruprecht-Karls University of Heidelberg & Thessaloniki (Germany and Greece)

The proposed paper intends to demonstrate the civil, administrative and criminal sanctions of the environmental legislation in Cyprus. More specifically, the environmental legislation of Cyprus that is proposed to be presented includes: the Law on Environmental Liability (Law No. 189(I)/2007), the Law on Environmental Information (Law No. 119(I)/2004), the Law on Environmental Assessment of Certain Works (Law No. 140(I)/2005), the Law on Air Pollution Control (Law No. 187(I)/2002), the Law on Industrial Emissions (Law No. 184(I)/2004), the Law on Water and Soil Pollution Control (Law No. 106(I)/2002), the Law on Greenhouse Gas Emission Allowance Trading (Law No. 110(I)/2011), the Law on Waste (Law No. 185(I)/2011), the Law on Nature and Wild Life Protection and Management (Law No. 153(I)/2003) and the Law on Wild Birds and Prey Protection and Management (Law No. 152(I)/2003). In view of the fact that said

legislation incorporates directives of the European Union the particular directive(s) that each of the said laws implements will be stated.
Initially the specific provisions of domestic environmental laws, whose breach leads to such sanctions, will be presented. Most commonly this includes non-compliance with statutory obligations and breach of terms and conditions of a license or permit. Then the sanctions imposed upon such violation shall be addressed. These sanctions are usually of an administrative nature, such as a monetary fine of up to 500.000 Euro and under special circumstances of up to 4.000.000 Euro or a ban on operation. However, the imposition of penal sanctions that may lead to imprisonment of up to four years and a penal fine of up to 500.000 Euro is not unusual. In some cases additional civil sanctions may be imposed. While explaining the legal provisions, a review of the relevant judgments of the national courts along with imposed administrative acts shall be set out. This will provide an insight into the actual implementation of the explained provisions on an administrative and a judicial level. Following the demonstration of the legal provisions, the case law and the administrative acts, the effectiveness, proportionality and dissuasiveness of the national penalties will be evaluated, whereas views can be exchanged on the penalties foreseen in other national laws implementing same directives and/ or having same scopes.

• ***Legislative Design for Effective Enforcement of Environmental Law – A UK Perspective***, Eloise Scotford, King's College London, Jonathan Robinson, Environment Agency and University College London (United Kingdom)

This paper will consider the design of UK environmental legislation in relation to effective enforcement. It will consider three issues: (1) the problematic nature of UK legislative provisions relating to enforcement, focusing on their fragmentation and the weakness and limits of sanctioning powers to date; (2) the scope for integrating and strengthening environmental enforcement provisions and practices; and (3) whether the approaches of other UK regulators might complement or improve those that are available for use within the environmental law framework. In thinking about 'effective' enforcement, the paper is concerned with enforcement approaches that lead to behavioural responses on the part of those regulated, and which deter unlawful actions in particular.
By focusing on legislative design, this paper relates closely to the second theme of the conference 'Designing Effective Norms', but it also relates to the fourth and sixth themes (Monitoring Implementation, Sanctions) since recent developments in environmental sentencing practice as well as the enforcement experience of other UK regulators will inform our analysis of good legislative design for environmental regulation. In the context of the EELF audience, the paper will thus have a double comparative aspect, both exploring issues of legislative design and practice within a UK context (which largely involves the enforcement of transposed EU environmental norms) and drawing on the comparative experience of other UK regulators in exploring options for effective enforcement provisions.
The paper will draw on the combined academic and regulatory expertise of the authors, who will be building on research first published in the Journal of Environmental Law in 2013 on the state of UK environmental legislation.[22] Since then, the authors have run a workshop with other UK regulators to gather comparative evidence on effective enforcement tools in other government sectors (economic and
non-economic). We would present all of these findings at the EELF conference and seek to move our work on further in thinking about optimal legislative design for effective enforcement.

[22] E. Scotford and J. Robinson, "UK Environmental Legislation and its Administration in 2013: Achievement, Challenges and Prospects", *Journal of Environmental Law,* 2013*,* pp. 389-409.

• ***On the active toleration of environmental infringements and criminal liability of Administrations and Law Enforcement Agencies***, Teresa Fajardo, University of Granada (Spain)

My contribution will serve to open a debate on the active toleration of environmental infringements and criminal liability of Administrations and Law Enforcement Agencies.
The violation by public institutions of environmental law that should be enforced is one of the most worrying aspects of the failure to implement environmental law, leading on many occasions to environmental crimes. Numerous instances of environmental aggressions are attributable, directly or indirectly, to the public authorities: the unwillingness to adopt and enforce regulation, the absence of monitoring of the requirements associated with the granting of authorization, lack of inspections or silencing the discovery of breaches of law and permits and the refusal to prosecute by the law enforcement agencies.
Mining activities are a field that particularly exemplifies that the administrative dependence on criminal law may become a serious obstacle to prosecuting and sanctioning environmental infringements, both administrative and criminal. Criminal law depends on the administrative legislation, and in particular, on a diligent application by the administrative authorities. Lack of adequate controls, active toleration of infractions and malpractice by the administrative authorities have been a recurring problem at the origin of industrial accidents, and in particular, in mining accidents. The authorizations and permitting procedures that must be complied with by operators as well as administrations in charge of them have become a matter of major concern and their infringements cannot be just an administrative infraction but also an environmental crime. Legal lacunae and shortcomings in the mining laws have been exposed by accidents and catastrophes that triggered the adoption of new EU legal regimes in order to better regulate the management of mining waste and the restoration of sites as well as those aspects of the licencing procedures and liability legislation that required a special regime.
This contribution will deal with the concept of environmental crimes related with:

- Infringements of licence conditions by the operator.
- Failure of the Administration to monitor the activities carried out under the licence and to update the standards of protection.
- The inadequacies, shortcomings and loopholes of the investigations and legal systems leading to acquittals.
- Prosecutorial discretion of national authorities and the European Commission when dealing with environmental infringements.

Some of the purposes served by the illegal behaviour of the Administration are:

- Promoting the general interest, since some Member States consider that priority should be given to economic and production factors, including providing employment in areas where there is considerable unemployment rather than the environment and that this will benefit the entire society.
- The particular interest may be obtaining a financial benefit by the public institution and the particular individual or company involved which may result in corruption.

This contribution will deal in particular with mining accidents, the points they have in common and the legal **challenges they present for** the enforcement of environmental law. Some of these challenges are:

- The adoption of compulsory legislation on monitoring and inspectorate services at the European level to improve enforcement and increase efficiency of environmental law at national level.
- Criminal liability of authorities as well as legal public entities must be foreseen in the Member States' legal systems in order to provide the required tools to combat environmental crime.

- In the case of hazardous activities, an Environmental Liability Directive Fund should be established to cover damage unable to be compensated by operator's resources and insurances as proposed by the Hungarian Government.
- A better dialogue between the different EU legal instruments and their enforcement is necessary, in particular, between the Environmental Liability Directive and the Environmental Crime Directive.

• ***The effectiveness of land-use planning options to integrate biodiversity and climate change aspects into land-use planning***, Bernard Vanheusden, Hasselt University (Belgium)

The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) launched in 2008 the International Climate Initiative – IKI to provide cooperation in the fields of climate protection and biodiversity conservation.
As part of the IKI Initiative, the Integrated Planning Project (IPP), implemented by the IUCN Environmental Law Centre and the IUCN Global Programme on Protected Areas, was approved in 2014. The overreaching goal of the IPP is to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020, adopted at the 10th COP of the Convention on Biological Diversity. The IPP wants to contribute through legal and technical tools that strengthen participatory land use exercises in areas of ecological importance and that integrate biodiversity and climate change aspects into land use planning frameworks.
Therefore, currently a global assessment is being conducted containing a wide selection of successful case studies that illustrate innovative and effective legal, policy and procedural land-use planning options in 16 countries all over the World (Argentina, Australia, Belgium, Bolivia, Brazil, Cameroon, Colombia, Germany, Mongolia, the Netherlands, South Africa, Tanzania, Turkey, USA, Vietnam and Zambia).
The global assessment ends in April 2015. The objective of this presentation is to present the main results of this project. Are biodiversity and climate change aspects already considered in land-use planning processes contained in these legal frameworks, and if so how? Which are effective land-use planning options to integrate biodiversity and climate change aspects into land-use planning. What makes a successful case study successful? The presentation will mainly focus on the European Member States, but might also discuss interesting examples from outside the EU.

• ***From conflicting to supporting EU policies – a long battle to secure cross-compliance with EU nature legislation***, Sandra Jen, WWF European Policy Office, Brussels (Belgium)

At the time when the European Commission has decided to undertake a "Fitness Check" [23] on the EU Birds and Habitats Directives, five years ahead of the 2020 EU Headline target of "Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss", and almost five years after the adoption of the new Strategic Plan (2011-2020) of the Convention on Biological Diversity Strategic with the 20 Aichi Target, this paper will look back over fifteen years of struggle to secure key provisions for cross compliance and policy coherence of EU sectoral policies (such as the Cohesion policy, the Common Agriculture Policy

[23] DG Environment, *Fitness check mandate for nature legislation*, 25 February 2014 http://ec.europa.eu/environment/nature/legislation/fitness_check/docs/Mandate%20for%20Nature%20Legislation.pdf, President Juncker, *Mission Letter to Karmenu Vella,* http://ec.europa.eu/commission/sites/cwt/files/commissioner_mission_letters/vella_en.pdf

(CAP), the Common Fisher Policy (CFP) or the EU transport policy) with EU environmental legislation and in particular the Birds and Habitats Directives.
This paper will build on an analysis of legislation and implementation tools/guidelines, as well as conclusions of numerous reports compiling results of case studies illustrating the extent of the problem and solutions foreseen. It aims at contributing to the discussion on "limits to the effectiveness of environmental law". The 2013 regulations for the European Cohesion Policy, CAP, CFP, transport and energy policies set up some new requirements such as "ex-ante conditionalities", targets, indicator settings, potential sanctions and improvement of the "partnership principle". Which determination will there be to have them implemented in the current EU context of so-called "better regulation" or "deregulation".

- Are there adequate provisions in EU sectoral policies for policy coherence, effective integration and cross-compliance with EU nature legislation?
- What will be the next opportunity to assess and improve the situation and how best to contribute to this assessment and potential further improvement?

• ***The European Court of Justice and the Effectiveness of International (Environmental) Treaty Provisions in the EU Legal Order***, Benedikt Pirker, Institute for European Law, University of Fribourg (Switzerland)

The effect of the provisions of international treaties in the European Union (EU) legal order has been a bone of contention in the case law of the Court of Justice of the European Union (CJEU) for a long time. The present paper argues that recent developments in this area cause concern for the effectiveness of environmental treaties adopted by the EU and that a more nuanced approach should be adopted. So-called direct effect designates the possibility for individuals to invoke provisions of international treaty law as a legal benchmark in disputes concerning domestic, in this case EU law. With regards to such effect, the CJEU's case law initially took a reticent stance on certain international treaty obligations, namely those of international trade law. On the other hand, it opened up the road to direct effect with regard to other treaties such as the Europe agreements. Two avenues have been opened by the Court to give effect to international treaty provisions: Granting direct effect to certain obligations as far as they have been implemented through EU secondary law, on the one hand; and leaving aside altogether the notion of direct effect to allow more liberally the review of legality of EU law against the benchmark of international treaty provisions on the other. The mentioned case law also applies to the effect of international environmental obligations of the EU in the EU legal order. More recently, however, concerns arise over whether the Court is taking the EU's international environmental obligations seriously. In recent case law on the Aarhus-Convention the Court narrowed down the two mentioned avenues to an extent that the effect of the important environmental obligations of the Convention all but evaporated. Against alternative views expressed by the General Court and the Court's Advocate General, the Court refused to accept that the Aarhus Regulation constitutes an implementation of obligations arising under the Aarhus Convention, and denied outright the reviewability of EU secondary legislation against the Convention as a benchmark. Arguably, a more nuanced approach would not only have been feasible, but would also be more suitable for future cases. Currently, however, despite frequent lip-service paid to the respect of international treaty obligations in its case law, the Court vigorously guards the autonomy of the EU legal order against undesired effects of such obligations. In reality, thus, it seems that the Court is more than happy to have its cake and eat it, too.

- Does the direct effect of international environmental obligations always increase the effectiveness of international environmental law or should this be seen in a more nuanced way?

- Are there experiences in national law which shine a different light on the topic, be it in favour or rather against direct effect for international environmental obligations in the domestic legal order?

- Should the CJEU develop different 'categories' of international law which are to be treated differently with regards to direct effect, so that e.g. the exceptional treatment of WTO law can be maintained, but international environmental law can be more effectively enforced?

• ***The Effectiveness of Environmental Constitutionalism: A Case Study***, Erin Daly & James R. May, Widener University, Delaware (United States)

Environmental constitutionalism is a relatively recent phenomenon at the confluence of constitutional law, international law, human rights, and environmental law. It embodies the recognition that the environment is a proper subject for protection in constitutional texts and for vindication by constitutional courts worldwide. The constitutions of about three-quarters of nations worldwide address environmental matters in some fashion, some by committing to environmental stewardship, others by recognizing a basic right to a quality environment, and still others by ensuring a right to information, participation, and justice in environmental matters. Indeed, most people on earth now live under constitutions that protect environmental rights in some way.
As more countries around the world recognize environmental rights in their constitutions, litigants are increasingly seeking to test the utility of those rights to protect and preserve the natural environment. As a result, courts have used constitutional environmental rights to stop the building of dams, to protect pristine forests and miles of coastline, and to moderate the effects of mining, to name just a few examples. But courts faced with these claims are typically writing on clean slates, with few precedents, sparse legislative history, and very little academic analysis to guide them, thus diminishing the effectiveness of environmental law.

This presentation will examine the effectiveness of substantive rights to a quality environment in the context of unconventional horizontal hydraulic natural gas fracturing (known as "fracking"), with special emphasis on a recent development in the State of Pennsylvania in the United States.

In Robinson Township v. Commonwealth of Pennsylvania, the Pennsylvania Supreme Court held unconstitutional major parts of the state's "Act 13"— the 2010 oil and gas law designed to facilitate the development of natural gas from the Marcellus Shale. The decision highlights the challenges of engaging constitutional environmental provisions, but demonstrates that, with sufficient creativity and commitment, meeting these challenges lies well within the bounds of judicial capability and authority. In so doing, the court breathed new life into Article 1, Section 27 of Pennsylvania Constitution, which creates public rights in certain environmental amenities and requires the state to "conserve and maintain" public resources "for the benefit of the people." The wide ranging implications of this decision will be felt for years, perhaps decades.

Because courts around the world are now being asked to engage in environmental constitutionalism, Robinson Township's thorough examination of the issues is instructive, not only for cases involving fracking

but for cases involving all manner of environmental concerns. Indeed, what is so striking about the decision is that it implicates almost all of the major issues that courts face when engaging constitutional environmental provisions. Most importantly, it shows what a difference a constitutional environmental right can make in advancing the effectiveness of environmental law. Courts and lawyers are likely to look to the Robinson Township decision for guidance and ideas.

By focusing on this recent decision, the presentation will examine three questions at the heart of environmental constitutionalism:

• To what extent has environmental constitutionalism been adopted?

• Does environmental constitutionalism advance environmental law?

• What can make these provisions more effective?

• ***Investors and Law Enforcers: How Multilateral Funds Incentivize Sustainable Forest Carbon Projects in Developing Countries,*** Yixin Xu, Erasmus University Rotterdam (Netherlands)

Sustainable development has been recognized as an essential principle for climate change mitigation and adaption activities in all sectors including the forestry sector.[i] However, there is significant empirical evidence demonstrating that forest carbon projects (forest activities that are expected to have impact on greenhouse gases emissions) fail to assist developing countries in sustainable development of environmental and socio-economic aspects.[24] Therefore, related to the subtheme 'incentives', this paper investigates how multilateral funds contribute to the implementation of the sustainable development principle by incentivizing the participants of forest carbon projects.

Firstly, based on previous empirical studies, this paper will review the positive and negative incentives regarding sustainable forest carbon projects in developing countries under the existing legal framework. Secondly, several case studies will be conducted to explain how multilateral funds including the Green Climate Fund and the World Bank Biocarbon Fund discourage the participants from planting harmful tree species and how those funds could provide incentives for more sustainable forest carbon projects.

Thirdly, this paper will examine the governance structures of such multilateral funds to see how they implement the sustainability principle in practice. Theoretically, the multilateral funds need to fulfill two objectives, which seem to be conflicting. On the one hand, from an investor's perspective, the funds should reduce financial risks and maximize the delivery of carbon credits with minimum costs. On the other hand, from a law enforcer's perspective, such funds set up sustainability safeguards whose application is likely to work against the goal of investors such as increasing financial risks and multiplying the costs of delivering

[24] *The United Nations Framework Convention on Climate Change*, adopted at the "Rio Earth Summit" , 1992(1994), art.2. *Kyoto Protocol*, 37 ILM (1998) 22, 1997(2005), art.12, para 2.

[24] Studies questioned the projects' environmental sustainability include: M. Ma, T. Haapanen, R. B. Singh, & R. Hietala*,"* Integrating Ecological Restoration into CDM Forestry Projects", *Environmental Science & Policy* 2013, p. 143, 145 et seq. Greenpeace*, What accelerate the Drought in Guangxi? – The secret of the fast-growing Eucalyptus Forest*, April 20, 2010. http://www.greenpeace.org/china/zh/news/stories/forests/2010/04/gx-plantation-story/. *Fern, Sinking the Kyoto Protocol: The links between forests, plantations and carbon sinks*, 2000, p. 1, 9 et seq. A. Long*,* "Global Climate Governance to Enhance Biodiversity & Well-Being: Integrating Non-State Networks and Public International Law in Tropical Forests" *Environmental Law,* 2011, 41, p. 95, 131 et seq. Studies questioned the projects' socio-economic sustainability include M. Kröger*,* "the Expansion of Industrial Tree Plantations and Dispossession in Brazil", *Development and Change*, 2012, 43, p. 947, 948 et seq. R. Carriere, L Lohmann, & L. Lohmann*, Pulping the South: Industrial Tree Plantations and the World Paper Economy*, 1996, p. 102. A. Agarwal, & S. Narain, *Global Warming in An Unequal World: A Case of Environmental Colonialism*, 1991, pp 16-17.

carbon credits. The third part of this paper will discuss how the funds balance and weigh the seemingly conflicting goals in the decision-making processes and whether they could succeed in both aspects.
Lastly, this paper will point out the limitations of multilateral funds resulting from the existing legal framework. First of all, the function of multilateral funds of providing positive incentives for sustainable forest carbon projects is limited because the value of the ecosystem services provided by sustainable forests are currently not sufficiently recognized by law. In addition, although multilateral funds are the main financial sources of many forest carbon projects, there is still a significant portion of forest carbon projects in developing countries that is financed by the private sector. Private investors are suspected by scholars to mainly pursue commercial purposes in forest carbon projects such as producing paper pulp and timber. Negative incentives for the environmental and social-economic sustainability of those projects are left to be ineffectively monitored. Possible solutions correlated with relevant multilateral funds will be further discussed in the paper.

• ***Double burden in environmental regulation: the simultaneous application of a carbon tax and an emissions trading scheme to the offshore petroleum sector in Norway***, Catherine Banet, Scandinavian Institute of Maritime Law, Petroleum and Energy Law Department, Oslo (Norway)

The paper will review specific aspects of the environmental obligations bared by the offshore oil and gas industry in Norway. It will analyse the simultaneous application of a carbon tax and an emissions trading scheme to the offshore petroleum sector in order to draw conclusions in terms of effectiveness in environmental regulation.

Indeed, the petroleum industry is one of the biggest sources of greenhouse gases (GHG) emissions, and in particular of carbon dioxide (CO_2). Norway is the third gas exporter and fifth oil exporter in the world, counting for 23 percent of gas imports in the European Union (EU). In 2012, CO_2 represented 84 per cent of the total GHG emissions in Norway. The country's largest source of CO_2 emissions comes from the petroleum activities, which take place offshore (around 27 per cent). This large contribution from the petroleum sector to CO_2 emissions is also explained by the particular shape of Norway's economy and energy profile where hydropower accounts for almost all onshore power generation. Any ambitious strategy to reduce national GHG emissions must therefore include the offshore oil and gas industry. As a result of a stringent regulatory approach, the Norwegian is considered today as being the most carbon efficient upstream oil and gas producing country in the world. In the 2011 International Association of Oil and Gas Producers (OGP) benchmark, the average emission intensity for 35 companies was 23kg of CO_2 per barrel of oil equivalent, while Statoil's average was 9kg CO_2 emitted per barrel of oil equivalent produced.
The Norwegian government has traditionally favoured the use of general mitigation policy tools based on the polluter pays principle. The Norwegian climate policy is therefore based on two cross-sector economic instruments: the CO_2 tax (since 1991) and an emissions trading scheme (ETS) (since 2005). As of 2014, more than 80 per cent of domestic GHG emissions are either covered by the emissions trading scheme or subject to a CO_2 tax or other GHG emissions taxes (such as for hydrofluorocarbons, HFCs, perfluorocarbons and PFCs). In the case of the offshore petroleum sector, the scope of application of the two instruments has been overlapping since 2008, when Norway joined the EU ETS at the start of the second trading period. Such overlap can be compensated through a reduced taxation basis dependent on the fuel type or usage. Some sectors or products benefit from a reduced rate in accordance with the Energy Tax Directive 2003/96/EC, in order not to alter the overall CO_2 pricing in the affected sectors. Meanwhile, based on the 2012 political agreement, the CO_2 tax for petroleum activities has been considerably increased from NOK 200 per tonne of

CO_2 to NOK 410 with effect from 1 January 2013. Regulation in addition to CO_2 tax and ETS will generally not be applied, but the government has the possibility to make use of any supplementary regulatory tools if it so deems necessary.
The paper has a twofold aim:
- First, it will review the manner the two instruments overlap, the reasoning behind such overlapping and the solution provided by the Norwegian legislation (analysis based on a review of the Petroleum Act, the Act relating to tax on discharge of CO_2 in the petroleum activities on the continental shelf, the Pollution Control Act, the Greenhouse Gas Emissions Trading Act, and applicable EU legislation through the European Economic Area (EEA) Agreement).
- Second, it will draw conclusions in terms of environmental law effectiveness in the situation of double burden. Besides the example of the petroleum sector in Norway, the conclusions of this analysis can be extended to other examples of double burden. Norway being a party to the EEA Agreement, the conclusions on that point can also be extended to EU countries. Environmental taxation is a tool commonly used in almost all countries. Carbon taxation is also a popular instrument, and some advocate for extending its usage, as a main policy instrument, together with or as an alternative to emissions trading, raising a concrete risk for double counting.

Double burden, in addition of being a fundamental question for the design of effective environmental instruments, is also a great concern for the competitiveness of European industries subject to more stringent environmental legislation than its competitors with the underlying risk of carbon leakage.

- Can the solution provided by the Norwegian legislation be deemed "effective"?
- Which conclusions can be drawn in terms of risk of double counting in environmental regulation?
- Does EU environmental legislation provides for sufficient mechanisms to avoid double burden ?

• ***The effectiveness of taxes on petroleum and its derivatives from concrete legislative experiences (Argentina, Brazil and USA*)**, Rodolfo Salassa Boix, National University of Cordoba and National Scientific and Technical Research Council (Argentina)

During the last fifty years environmental protection has become one of the most relevant and urgent issues on the international agenda. Pollution affects not only every country on Earth, regardless of their economic development or pollution contribution, but it also affects future generations. In addition to that, many consequences of the environmental degradation have now become practically irreversible. Concerns about the effects of ecological deterioration have driven several Nations to adopt various measures in order to stop or at least reduce this devastating process. Within the broad spectrum of possible ecological measures, environmental fiscal measures have gained an increasing prominence since most countries do already collect some kind of them in their tax systems.
The public financial activity, defined as the activity directed to obtain incomes and to make expenditures to satisfy public needs, has been evolving and using different methods of operation according to the pursued objectives. Nowadays this activity is not only limited to obtain sums of money, in order to finance public expenditures, but it also could be used to achieve other non-fiscal purposes that are legitimated and enforced by the Constitutions, for instance the environmental care. There is an extensive range of non-fiscal purposes

taxes but in this opportunity we will highlight levies focus on environmental protection from the pollution resulting from petroleum activities.
The ecological impact of petroleum pollution is a highly complex issue within the legal field. On the one hand, exploitation, exploration and transportation of petroleum are necessary and vital for our society style, so that these activities cannot be totally banned. On the other hand, it is an ultra hazardous activity that embodies a probable risk of catastrophic damage on a large scale, which should be avoided. These apparently irreconcilable extremes find their balance point in the regulation of these activities through the systems of prevention, mitigation, restructuring and compensation for damages caused by spills of this nature, as well as punish the responsible persons. In this regard we can take advantage of the tax system.
Considering the evident significance of petroleum benefits in our lives, the high ecological damages and risks derived from their activities and the transcendental role that ecological levies have developed in the environmental protection field, we expect to demonstrate that taxes, properly regulated and implemented, could be effective legal measures to face pollution resulting from petroleum activities. We will develop this objective from the analysis of three different taxes: Tax on Petroleum of USA (1980); Tax on Liquid Fuels and Natural Gas of Argentina (1991) and Contribution of Intervention in the Economic Domain of Brazil (2002).

- Could any tax be effective to face pollution resulting from petroleum activities?

- Which are the main reasons that could become a tax ineffective to face pollution resulting from petroleum activities?
- How can we measure the effectiveness of taxes on petroleum to face pollution resulting from petroleum activities?

• ***EU-ETS governance reform: What future for a European Carbon Market Agency?***, Alice Monicat, Ecole Normale Supérieure de Rennes (France)

The uncertainties regarding the setup of a global agreement to address climate change in Paris 2015 conference do not challenge the role of emission trading scheme in national and local climate policies.
An expansion of local emission trading market places has been observed in the past few years. But, in the current context, their capacity to set the "right carbon price", e.g to secure other economic actors' forecasts (credibility) while taking into account economic, technological and scientific changes (flexibility), is strongly challenged. Flexibility and credibility are both required to allow the global market to reach its goals : decrease greenhouse gas emissions in the short term and impulse necessary investments to reach new low-carbon economic models in the long term.
The problematic of carbon markets' environmental and economic efficiency finds some answers in the study the European emission trading scheme (EU-ETS). Set up in 2005, the EU-ETS is presented as the main instrument of EU climate policy. Pivot point of carbon global pricing, symbol of EU leadership on climate change, this model has been inspiring new local initiatives. However, the model has encountered limited successes (emission reductions are laid down to the economic situation) and failed to price carbon emission at its right price (less than 5€ per ton since 2013). Despite all, the objective of this presentation is not to condemn the EU-ETS but to assess the reforms that could be able to correct it and reinforce its efficiency.
The reflexion on the reform of European carbon market governance was initiated by economists facing a glut of quota offers due to structural dysfunctions. The spectrum of the institutional reforms each of them suggest,

offers a range of solutions more or less ambitious according to market governance stakes (single/double objective; flexibility/credibility). Among solutions, some economists proposed to increase system's ability to meet exogenous shocks unchanging its institutional frame, on a basis of a rule-based mechanism (Taschini and Al, 2014). Others, more ambitious, explored the opportunity to create an independent carbon market regulatory agency which should be granted of important regulatory powers to strengthen the long term credibility of the system (De Perthuis and Trotignon, 2013). Actually, this presentation will focus on the last approach to imagine a carbon market regulation inspired of the money markets regulatory model.
Even though the European Commission has recently supported a rule-based mechanism by proposing the creation of a stability reserve by 2021; the idea of creating an independent regulatory agency is not meaningless and should not be left behind. Regardless the answer to the improvement of market mechanisms efficiency, this project for the EU-ETS governance reform has interesting legal stakes, specific to EU law.
Thus, the aim of this contribution is to highlight what institutional incidences would have the creation of a European Carbon Market Agency (ECMA) in order to identify its role in climate policy and its position in EU institutional frame. With a focus on:
- Identify legal and institutional threats to the setting up of such an agency
- Determine the institutional form (nature/ independence) and power scope (mandate) of this agency, in respect of EU law and its recent evolutions (CJUE, January 22th 2014, RU c. Council and Parliament, Short selling case)
- Explore the role of this authority and through it EU's one in the emerging transnational climate change governance.

• ***Promoting Women's Participation: A Gender Approach for the Effectiveness of Environmental Law*****,** Isabelle Michallet, Lecturer, HDR Institut of Environmental Law, Jean Moulin University, Lyon (France)

Women's participation to environment protection is promoted by environmental law since the 1992 Rio Declaration: "*Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development*" (principle 20). In 2006, UNEP voted for a Gender Plan of Action, to improve gender equality in the environmental politics, as everywhere else within the United Nations system. Treaties and other soft law documents related to women's rights consider they have an essential role to play "*in the development of sustainable and ecologically sound consumption and production patterns and approaches to natural resource management*" (Beijing Platform of Action, 1995, § 246).
As a result, women have been recognised a particular place in biological diversity conservation and water management. A gender mainstreaming is developed by the institutions of the Convention on biological diversity and of the Convention on desertification. By strongly encouraging women's participation, these instruments have tried to improve their enforcement and effectiveness. However, what is actually promoted are traditional social functions assumed by women, and not necessarily gender equality through participation. Gender mainstreaming in climate change system or in chemicals treaties is not as developed, as women are here more often described as victims than as actors.
To be effective, environmental law cannot rely on a participation principle ending up in discriminating women by considering them mainly as householders or mothers. A gender approach, thought to promote a real equality in every fields of environmental protection has to be built up. It will not by itself guarantee the effectiveness of environmental law, but without gender equality environmental law will surely fail to become mature law, missing to include one half of humanity among its participating actors.

- More than 20 years after the Rio Declaration, is women's full participation achieved?

- Do women have a different role to play than men in implementing environmental law?
- Can gender mainstreaming improve the effectiveness of environmental law?

• ***The environmental protection of indigenous traditional knowledges and the active participation of indigenous peoples in planning, management and decision-making processes as means of improving the effectiveness of Environmental Law,*** Priscilla Cardoso Rodrigues, University of Roraima, Amazonia (Brazil)

According to the United Nations, there are approximately 370 million indigenous people belonging to 5,000 different groups, in 90 countries worldwide (including European countries, especially in Artic), living in areas considered critical to the conservation of biodiversity and living in a traditional way of life that does not threaten these resources and environments. Even with all economic, political and historical limitations, the lands which indigenous traditionally occupy show a high degree of conservation and an increase of the local biodiversity thanks to their traditional knowledges developed over many generations.
The indigenous traditional knowledges include their beliefs, social and cultural practices, spirituality, forms of expression, arts and everything else that pertains to their way of view and living in the world. These knowledges result from a collective cultural heritage developed from generation to generation, which is reproduced and recreated by each indigenous in his/her relationships with the community and the environment.
Currently, the indigenous traditional knowledges are legally protected under the intellectual property logic, even when addressed by environmental laws, such as the Convention on Biological Diversity. However, there is a contrast between the individualistic, patrimonialistic and civilist approach of intellectual property and the collective, solidarity and culturally diverse
essence of these knowledges.
For that reason, this paper proposes the legal protection of indigenous traditional knowledges under the environmental logic, through their recognition as cultural services of ecosystems in accordance with the Millennium Ecosystem Assessment theory.
On the other side, the environmental protection of these knowledges keep alive the dream that there are forms of human life that maintain an unified and integrated way of getting along with the Nature and raise awareness of the need for environmental preservation and sustainable development. This would become a way to increase the very effectiveness of Environmental Law.
Another way to carry out this effectiveness is to allow the active participation of indigenous peoples in policies, activities or programs affecting their territories and to use their traditional knowledge to overcome the scientific uncertainties that currently undermine the effectiveness of Environmental Law.
The recognition of indigenous traditional knowledges as cultural services of ecosystems arisesfrom the cultural tie between indigenous and their environment as well as from its effects on human well-being, which can be described by their spiritual, inspirational, aesthetical, health, and cultural aspects.
It happens that there is a practical issue that currently unsettles cultural services: their valuation. The concept of ecosystem services has become a framework for both environmental and economic planning, management and decision-making processes thanks to their economic
valuation perspective. However, although economic approach succeed for provisioning, regulating and supporting services, putting a monetary value in cultural services is incompatible with their intangible and/or incommensurable features and that is the reason they often end up discarded as hidden externalities.
In the specific case of indigenous traditional knowledges it becomes even worse because they are central elements of the worldview, values and identity of indigenous peoples. Thus, turning these knowledges into

commodities by a purely economic valuation could lead to unexpected changes in the social interactions of these groups. This is why the protection of those knowledges should be about something more important than restitution or compensation.
Thus, the objective of this paper is to propose a review of the currently economic methods of valuation ecosystem services by using concepts and methods from anthropology, sociology, and social-environmental disciplines.

• ***Environmental Human Rights and the Case for Achieving Effectiveness through Ecological Restoration?,*** Afshin Akhtar Khavari, Griffith University (Australia)

Increasingly, ecologists and environmental advocates have started to ask whether restoration of ecosystems has to become a priority in environmental governance. Ecological restoration has a particular meaning but is aimed at restoring an ecosystem back to an historical trajectory when it was last resilient enough to function independent of human interference. Little has been done examining whether environmental human rights, such as the right to clean water, can influence restoration goals and projects. For example, a restoration project removing invasive weeds in South Africa also ensured that more clean water became available for human consumption. The advantages of focusing and connecting environmental human rights to restoration are that increasingly more countries are adopting legislative and constitutional provisions protecting environmental human rights. Countries like Ecuador have used the language of rights to directly provide for the rights of nature to be restored. Many others directly or indirectly provide constitutional protection for environmental human rights including the right to a clean environment. This general coupling presents ecologists and environmentalists with opportunities to utilise the languages of rights for restoration goals, but no country has as yet provided for a human right to ecological restoration or an equivalent to it. Arguably, existing environmental human rights could be interpreted to include restoration goals in particular circumstances such as for instance the right to a clean environment through restoration in areas where mines are abandoned. Modern extensions of this right could be used to argue for restoration when protection or preservation are seen as the usual limits of what should happen in ecosystems that have lost their resilience.

Aside from this utility driven argument, the value of the coupling has to be ideologically substantiated. This is not just because we can overcome the limits of the rights discourse itself for deeply connecting human's with nature, although this could be an outcome, but also in terms of enhancing the poignancy of the ecological arguments as to why restoration is important for protecting human rights beyond simply preserving ecosystems or creating novel ecosystems. Identifying what it is about ecological restoration that is significant for human rights can enhance the use of law and legal discourse of human rights to achieve ecological restoration in broader governance initiatives. These and other issues are described and analysed in this contribution to highlight potential opportunities for governance through ecological restoration.

- Is restoration an effective governance tool when thinking about ecological damage/harm

- Can the moral choices we make in favour of human beings using environmental human rights be deployed to advance ecological restoration goals?

- Can the ecological arguments for restoration be developed and articulated in terms of creating moral choices favouring human welfare objectives?

• ***Czech Public Defender of Rights and environmental impact assessment,*** Jitka Večeřová, Office of Public Defender of Rights of the Czech Republic and Masaryk University, Brno, and Michaela Konečná, Office of Public Defender of Rights of the Czech Republic, Masaryk University, Brno (Czech Republic)

The Czech Parliament ratified the Aarhus Convention (which deals with public participation in environmental matters) in 2004. The Czech Republic is also obliged to implement EU legislation – into Czech law. Our contribution pays attention to environmental impact assessment (EIA) – process which is regulated by EU legislation (especially Directive 2011/92/EU – hereinafter referred to as "EIA directive") in Czech law.
On the April 25th 2013 the European Commission sent to the Czech Republic formal note. Then the proceeding of infringement of Treaty on the Functioning of the European Union in case of defective transposition of EIA directive was conducted against the Czech Republic. Especially The European Commission admonited insufficient obligation of final opinion of EIA procedure and possibility of changes of the proposed project during further related administrative proceedings, insufficient public participation in the EIA procedure, insufficient timely and effective judicial protection of concerned public (societies).
On March 6th 2015 there was published the Act No. 39/2015 Sb., in the Collection of Laws. This Amendment to the Act No. 100/2001 Coll., on environmental impact assessment, (hereinafter referred to as the "EIA Act") is result of the effort of elimination of mentioned defective transposition. Act No. 39/2015 is effective from 1. 4. 2015.
In the beginning of this contribution we introduce very briefly development of Czech legislation in the area of environmental impact assessment. We mention the first Act No. 244/1992 Coll., and then the current legislation (Act No. 100/2001 Coll.). We also briefly describe the proceeding of infringement.
The main goal of this contribution is to present and highlight the role, positions, legal measures and options of the Public Defender of Rights in this area. We discuss the activity of the Defender in the legislative process. We apply general options directly to the example of the amendment of Act No. 100/2001 Coll. In the past the Public defender pointed out many shortcomings in the legislation and incorrect procedure of the administrative authorities in the process of environmental impact assessment. We will think about if the Act No. 39/2015 Coll. redressed mentioned shortcomings. We will also try to think about shortcomings which may appear in the future. In the conclusion we summarize our opinions.

- Do other participants have their own (similar) experiences with legislation or proceeding of infringement in their countries in the area of environmental impact assessment?
- Do other participants think that the amendment to the Act No. 100/2001 will be sufficient for the European Commission?
- Do other participants think that the Public Defender of Rights could do more in the area of environmental impact assessment?

• ***Monitoring the implementation of environmental law - Non-judicial and non-adversarial mechanisms (alternative dispute resolution),*** Alexandros Tsadiras, European University Cyprus (Cyprus)

The main objective of the suggested paper is to examine the European Ombudsman's decision making in the area of EU environmental protection and assess his effectiveness in the Union space as an extrajudicial mechanism for delivery of environmental justice.
While environmental protection through litigation before the Court of Justice of the European Union has been subjected to extensive and incisive scholarly analysis, the European Ombudsman's extra-judicial contribution appears to have largely escaped the academic's attention and remains to date a relatively under-explored realm of study. The suggested paper will reduce that gap of research and commentary.
The discussion will be structured in the following manner. First, we will contextualize the ensuing analysis by explaining the main role and functions of the European Ombudsman in the Union institutional configuration. That will be followed by a detailed empirical analysis of the European Ombudsman's environmental record, which will strengthen our understanding of his contribution in the environmental field. In this part we shall address a number of varying issues including the profile of the parties involved in environmental disputes, the Ombudsman's standard and intensity of review and his remedial response to environmental grievances. The inquiry will conclude with consideration of the ways in which environmental complaints have influenced the Ombudsman's position in the institutional universe of the European Union.

- Is the effectives of environmental law strengthened through the use of non-judicial and non-adversarial mechanisms such as the European Ombudsman?
- How does the European Ombudsman fair in comparison to the Court of Justice of the European Union in the realm of environmental law?
- How has thus far evolved the institutional symbiosis between judicial and extra-judicial means of environmental protection in the Union space?

• ***Green Judges - Role of Judiciary in Environmental Enforcement in China: Challenges and Prospects,*** Wen Xiang, University of Copenhagen (Denmark)

Along with its economic development, China is increasingly facing environmental degradation and challenges in the last two decades. On the one hand, China is more integrating in global environmental governance, such as actively engaging with multilateral environmental agreements and bilateral negotiations. On the other hand, China is integrating the international norms into its domestic implementation of environmental law.
The EU has been starting collaboration with China on environmental governance issue by means of the EU-China Environmental Governance Programme (EGP) in recent years. As a five years' programme, the EGP began in December 2010 and will be completed in December 2015. A recent meeting held by EU-China Environmental Governance Programme (EGP) in December 2014 aims to explore the implications for China to adopt the principles of the Aarhus Convention, which are mainly about public access to environmental information, public participation in environmental decision-making, and access to justice. Needless to say, this has influenced the domestic environmental governance in China.
The paper will provide an overall analysis on the environmental enforcement in China, followed by specific focus on role of judiciary in environmental protection. Since China's Environmental Protection Law has been revised in April 2014, a new section five explicitly addresses information disclosure and public participation, including the public access to justice. Furthermore, several environmental courts have been established at local levels since 2007. A case with regard to the latest public interest litigation brought by a local NGO in Taizhou will then be discussed to address the role of environmental courts and NGOs in environmental cases.

The paper is expected to address the following concerns: what will be the role of newly introduced environmental courts in environmental enforcement in China? How about the effectiveness of public access to justice in environmental matters? What are the role of NGOs in judicial enforcement of environmental law in China? In a word, challenges and prospects are to be concluded in the course of the research to focus on the role of judiciary in environmental enforcement in China.

• ***Reassessing the Role of International Courts and Compliance Mechanisms in Ensuring Effectiveness of International Environmental Law,*** Antonio Cardesa-Salzmann, Rovira i Virgili University, Tarragona (Spain)

Non-compliance procedures in MEAs (hereinafter, NCPs) are largely perceived as effective tools to promote and ensure compliance. Taking the Montreal Protocol as a model of inspiration, NCPs have been fine-tuned – with varying degrees of success– to satisfy the enforcement needs arising out of the primary rules' specific features in a wide range of environmental regimes. Therefore, their institutional and procedural configurations are not uniform, but range from tendentially diplomatic to quasi-judicial mechanisms. Particularly in environmental regimes protecting collective interests, NCPs may be regarded as nuanced, incremental and innovative responses to the perceived deficits of traditional bilateralist patterns of enforcement of international law. In contrast thereto, bilateralised regimes that are mainly based on trade-related measures offer considerable space for traditional approaches to their enforcement, which enter into competition with endogenous compliance mechanisms. Even more, relevant practice suggests that state responsibility for the breach of international obligations undertaken in these regimes, and the enforcement of its implementing legislation through national courts are eclipsing NCPs in this context. On the basis of this assessment, three theses will be forwarded. First, it will be submitted that **opening up compliance mechanisms to public participation would increase their effectiveness and legitimacy**. While the direct translation of the Aarhus Convention's model into the global context may prove unrealistic, practice developed under the Kyoto Protocol compliance system may provide a suitable source of inspiration for other global regimes, as it appears to be potentially respectful not only of the international and transnational, but also of the multi-civilisational dimension of contemporary international society. Second, it will be argued that **compliance control under global environmental regimes would benefit greatly from enhancing complementarities with national and international judiciaries**. Such coordination between compliance bodies and national and international courts would contribute to the international rule of law and the effectiveness and legitimacy of international (environmental) law. In this regard, special attention will be paid to the implications of *Whaling in the Antarctic (Australia v. Japan: with New Zealand intervening)*, so as to elucidate this judgment's potential for the development of the secondary rules of general international law towards a higher degree of solidarity within the structure of the international legal system. More specifically, it assesses whether New Zealand's intervention (on the basis of article 63(2) ICJ Statute) might open a window for an incremental re-interpretation of the limits of the Court's jurisdiction over claims based on multilateral treaties enshrining common interests.
The paper concludes with a broader reflection on the necessity of reconceptualising international (environmental) law as a body of international *public* law that ensures the fairness and legitimacy of institutions and procedures, through which common interests and concerns of mankind are identified and protected. In particular, the paper argues that **a broadened standing and jurisdiction of judicial or quasi-judicial bodies for claims against breaches of communitarian obligations might further the appearance of a sort of international public interest litigation. The view is taken that such a development may offer a valuable system of checks and balances to react against hegemonic interpretations of international**

law, thus contributing to a more balanced arbitration of competing notions of the common good. To that end, however, international adjudication –particularly before the ICJ– needs to evolve away from its present minimalistic focus on *dispute settlement*, toward some sort of *constitutional adjudication*. Hypothetical as it indeed may be, such an evolution would be a significant contribution not only to accommodate systemic integrity and structural, transversal values in the heterarchic global legal order, but ultimately also to the effectiveness and legitimacy of international environmental law.

• ***Reducing administrative burdens, decreasing environmental protection? The regime of exemptions from permit requirements for waste disposal and recovery operations: challenges and prospects in Italy,*** Giada Dalla Gasperina[*], Trente, (Italy)

The Waste Framework Directive (WFD) generally requires that waste treatment, recovery or disposal operations be authorised by an environmental permit. The WFD enables, however, Member States to introduce exemptions from the requirement to hold an environmental permit. These exemptions should be subject to suitable environmental safeguards: exemptions could only be granted to waste disposal and recovery operations that pose low risk to the environment. In Italy, the regime of exemptions foreseen by the WFD has been implemented by article 214 of Legislative Decree n. 152/2006 according to which exempt waste operators are subject to a simplified permit procedure. The simplified permit procedure relies on self-certification declarations of conformance to the law. Accordingly, exempt waste operators can start operating ninety days after having submitted the required self-certification declarations to the competent public authorities, which do not have to perform any on-site inspection before the installation or plant starts to operate.
The regime of exemptions from permit requirements can be seen by many as a welcome simplification measure to the complex waste management regulation. But what does it mean in terms of environmental protection in Italy? The results of the author's Ph.D. research exploring waste crime in the country have revealed that waste installations or plants subject to the simplified permit procedure were regularly engaged in rulebreaking behaviour. The questions that pose themselves, therefore, are: is the simplified permit procedure, which falls under the exemptions from permit requirement, likely to increase non-compliance at the expense of the environment? Or is the absence of on-site inspections that enables exempt operators to violate the law without being detected?
In the present contribution, I address the problem under what conditions exemptions from permit requirements may or may not be more effective than the so-called command and control regulation. I argue that to secure compliance with the law, only companies that adopted environmental voluntary certification schemes and have a good environmental record could be granted exemptions from the requirement to hold an environmental permit and, therefore, benefit from simplification and reduction of administrative burdens.

[*] Giada Dalla Gasperina holds a Ph.D. in International Studies from the School of International Studies, Trento, IT, with an emphasis in international and European Union law. Admitted to Bar since 2013, she is working professionally as a lawyer providing legal counsel regarding domestic and European law, more specifically pollution control law and waste law.

• ***Towards effective conservation mechanisms in areas beyond national jurisdiction,*** Beatriz de Sousa Fernandes, University of Edinburgh (United Kingdom)

The increasing scarcity of fish stocks inside national jurisdiction has intensified the search for commercial stocks on the high seas, that is, in areas beyond national jurisdiction (ABNJ). Consequently, high seas biodiversity has become significantly more vulnerable. Unsustainable fisheries practices act further to impact dependant by-catch species, such as sharks and marine mammals, and to destroy important habitats, such as deep-sea corals.
The last two decades, however, have witnessed an increase in international commitments to substantially change the way oceans are managed. Standards developed include the application of scientific advice and the precautionary principle to ensure the long-term sustainability of stocks and an ecosystem approach. Nevertheless, all states still enjoy the freedom of fishing on the high seas. In fact, restriction to high seas fisheries activities only occurs when there is an agreement regulating them.
Regional fisheries management organizations (RFMOs) are responsible for managing high seas fisheries under the 1982 UN Convention on the Law of the Sea (UNCLOS) and the 1995 UN Agreement relating to Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA). Through RFMOs, states have the power to agree on the adoption of effective conservation measures for managing high seas fish stocks under the jurisdiction of the particular RFMO.
Each RFMO convention reflects what its parties were prepared to regulate. Assessments of the measures adopted by different RFMO's have revealed disparities in their effectiveness arising from different regional interests. Whereas results from the Commission for the Conservation of Antarctic Living Marine Resources indicate that good practice can be achieved, most RFMOs face numerous problems, *e.g.* low compliance by members with the rules and recommendations at regional and international level. Furthermore, third states are not bound by the RFMOs' agreements, thus effective control of flag vessels is limited.
The proposed article analyses the role of RFMOs in assisting the international community to meet its commitments to, and legal obligations for, the conservation of the marine living resources in ABNJ. It discusses the influence of United Nations General Assembly resolutions in shaping international fisheries policy; the introduction of sustainable principles brought by UNFSA and 1995 FAO Code of Conduct; and, based on the current international discussions that may lead to the negotiation of an implementing agreement to UNCLOS, it analyses whether a new agreement is required to cover existing gaps in the regulation of the conservation of marine biodiversity in ABNJ. Finally, it discusses some legal options to improve sustainable fisheries management in ABNJ.

- Is it possible to strengthen the effectiveness of regional organisations, such as the RFMO, when the managed activity to be regulated, *e.g.* sustainable fisheries and the conservation of living resources, requires global cooperation?

- How to ensure compliance by contracting parties with the obligations set out in the RFMO conventions and in their subsequently adopted binding decisions?

- How to enhance the capacity of regional sectoral institutions to cooperate to implement cross-sectoral management of biodiversity conservation in ABNJ more fully?

• ***Assessment of the Effectiveness of Basel Convention on Transboundary Movement of Hazardous Waste***, Wanying Huang, University of Strathclyde (United Kingdom)

This presentation aims to outline what makes an environmental regulatory regime effective in the context of the international regime on the transboundary shipment of hazardous waste, particularly the Basel Convention, and so fits the first subtheme of the conference. The Basel Convention which was signed in 1989, seeks to control the transboundary movement of hazardous waste. For the purpose of decreasing generation of hazardous waste and transboundary movement of hazardous waste to protect human health and environment,[25] the Basel Convention established a framework which includes Environmental Sound Management (ESM),[26] Prior Informed Consent (PIC),[27] the Basel Ban (albeit not yet in force),[28] the duty to re-import[29] and the criminalisation of illegal traffic[30] to control and manage the production, transport and disposal of hazardous and other wastes. Until 2013, 11COPs have been held to enhance the efficiency of the implementation and enforcement of Basel Convention.[31] The next COP, COP 12, will be held jointly with the Rotterdam and Stockholm Conventions COPs in Geneva, Switzerland in May 2015.[32]
This presentation considers three questions:

- Has the Basel Convention proved effective in achieving its aims in reducing and controlling the transboundary shipment of waste?
- What accounts for its effectiveness (or lack thereof)?
- How could it be made more effective?

To answer the first question both quantitative and qualitative measures of effectiveness will be employed. For example, based on official and NGO statistics has the amount of hazardous waste traded actually reduced? Has the amount of illegal traffic reduced? Qualitative evidence based on literature review into the Convention's effectiveness will also be presented.
Answering the second question will involve analysis of the reasons for its effectiveness including whether this is because of the regulatory system introduced by the Convention – ESM, PIC, active COPs, coupled with the influence of the Basel Ban[33] and strong efforts at national level to enforce. Reasons for continued illegal traffic and the continuing lawful trade will also be considered. These may include enforcement problems, lack of resources, staff, expertise, political interference and also lack of appropriate disposal facilities in export countries.
Answering the third question will involve considering whether the 'Ban' might be more effective if it actually comes into force as a treaty amendment, whether the Protocol might have a deterrent effect if it comes into force along with enforcement improvements including the increased use of networks[34] and technical assistance to developing country enforcement agencies and deeper implementation of waste minimization and the proximity principle. However, the aim of the paper is ultimately to identify what actually makes an international regime effective.

[25] *Basel Convention*, Preamble, 1989.
[26] The aim of Basel Convention is controlling the hazardous waste and transboundary hazardous waste under environmental sound management which addressed in Article 4(2)(a), Article 4(2)(b), Article 4(2)(c), Article 4(8) and Article 4(9).
[27] PIC was raised on United Nation Assembly-Resolution 37/137 in 1983 and principles for International trade in chemicals for the first time, PIC precede of Basel Convention addressed in Article 6 (4).
[28] Article 4 establishes general obligations for parties. Parties have right to prohibit import hazardous waste and other waste and shall not export hazardous waste to the parties which have banned the import such waste, more prohibition rules were in Decision II/12 and Decision III/1 on COP2 and COP3.
[29] *Basel Convention*, art.8.
[30] *Basel Convention,* art. 4 (3) and (4).
[31] Please see: http://www.basel.int/TheConvention/ConferenceoftheParties/OverviewandMandate/tabid/1316/Default.aspx
[32] Please see: http://chemicals-l.iisd.org/events/basel-cop-12-rotterdam-cop-7-and-stockholm-cop-7/
[33] For example, the EU has implemented the Ban even though it is not in force through Regulation 1013/2006..
[34] M. Faura, P.D. Smedt, A. Stas and E. Elgar, "*Environment and Enforcement Networks: Concepts, Implementation and Effectiveness",* United Kingdom, Edward Elgar Publishing, 2015.

• ***Soft law in environmental matters: the role of the ECJ***, Mariolina Eliantonio, Maastricht University (Netherlands)

It was 20 years ago when Francis Snyder noted that rules of conduct that may have no legally binding force may nevertheless have practical effects in the European legal system. Two decades later, boosted by institutional support enshrined in documents such as the Commission White Paper on Governance and the Lisbon Strategy and Lisbon 2020, the so-called 'soft law' instruments, one of most important tools of EU governance, are present in nearly every EU policy.
Much academic debate has arisen on the use of soft law by the EU, on Member States' compliance with soft law provisions, and, most of all, on the desirability and legitimacy of the use of soft law instruments in the process of European integration. Particular legitimacy concerns may arise specifically when soft law measures are the subject matter of adjudication before the European courts. In particular, the use of soft law in court may have the effect of transforming soft law into hard law, since the European courts may recognize certain legal effects to soft law measures, thereby endowing soft law measures with hard law effects. The European Court of Justice may, therefore, be fostering illegitimate ways of decision-making, thus not only widening the democratic deficit of the European Union, but also endangering the very principle of the rule of law which it is entrusted with protecting.
Despite the serious legal consequences attached to the use of soft law by the European Courts, the issue is one which has, so far, received little academic attention. This papers aims at partially filling this academic gap by examining the ways in which the European Courts treat soft law measures stemming specifically from the EU environmental legislation, a policy area with an abundance of soft law measures and of litigation before the European Courts.
This paper aims at providing both a quantitative and a qualitative analysis of the role of soft law before European courts in environmental matters. First, from a quantitative point of view, it will be assessed to which extent relevant soft law measures are present in EU courts' rulings, relative to the importance they have for the specific legislative instrument from which they stem. Secondly, where soft law measures are present in the rulings, a qualitative analysis will be carried out, in order to examine specifically how such measures are treated by the courts, i.e. what status and legal effects are recognized to them.
In the end a conclusion will be drawn as to the stance which the European courts have taken vis-à-vis the system of governance by the use of soft law and to which extent their activities may be considered a threat to the rule of law and democracy principles.

• ***The normative power, from hard to soft law: reflections from the climate change international regime***, Marion Lemoine, Aix-Marseille University (France)

Why are legal norms complied with in practice? The increasing role of soft law in the international legal regimes significantly influences this issue. In the context of emerging forms of normativity, the climate change international regime well illustrates this phenomenon.
The regime is composed by norms very diverse in nature and scope, mixing hard law and soft law: Framework Convention, Protocol, Decisions of the COP, recommendations, standards, guidelines, good practices, etc. Since the last Conferences of the parties (COP) to the United Nations Framework-Convention on Climate Change (UNFCCC), many things have changed in a very short time, towards a bottom up approach. This contribution tries to give a legal analysis of this normative variety, aiming to distinguish the effectiveness criterion.

At the methodological level, trying to categorize this variety of norms between hard law and soft law offers limited options. This can be explained for example by the fact that a non binding norm can be particularly effective. The evolving nature of norms also conducts to reconsider the categorization between hard law and soft law. Many norms of the climate change regime are flexible: they are adapted to the evolving scientific knowledge and political decisions through a continuous negotiation process. Thus, this paper investigates what types of norms are well implemented in practice. To do so, we refer to the concept of normative power, developed in literature[35], which provides going beyond the separation between hard law and soft law, in order to explain why certain norms are effective and other are not.

Analyzing the normative power induces firstly to describe the participative law- making process, where norms are continuously debated among publics and private actors. The legal source of law, the quality and intention of the author of the norm, as well as the normative instrument type will be here analyzed. Secondly, based on both on empirical studies and analyses of the text, this paper will describe the key features of the applied norms: what type of actors applies these norms? How are the norms received, accepted and applied by the actors? The aim of this second part of the analysis is to identify to what extend the norm become a reference? Thirdly, the normative power supposes to describe the guaranties provided by the legal regime to ensure the implementation of the norm: is the norm binding? Is it sanctioned? Is it an accounting norm or not?

The analysis of the power of certain norms of the climate change regime conducts to reconsider the categorization into two categories (soft and hard law), towards a spectrum of normative power, able to embrace a complex and evolving normativity.

• ***Procedural rights and effective justice – Danish wind energy experiences,*** Helle Tegner Anker, University of Copenhagen (Denmark)

Procedural rights and guarantees have gained an important function in environmental legislation – not least reflected in environmental assessment and public participation requirements as well as associated rules on access to justice. The Aarhus Convention is a strong example of the 'proceduralisation' of environmental legislation[36] (Lee & Abbot, 2003). Procedural rights and guarantees generally serves the purpose of influencing and controlling environmental decision-making with the aim of ensuring better decision-making from an environmental perspective, while at the same time allowing the public to express their views and address shortcomings in the decision-making processes. Procedural rights such as public participation may, however, also raise questions on effective justice – in particular when they are associated with wide rights of access to justice. As these rights are only procedural in nature, the final outcome of a case might not be the desired change in substance, i.e. to reject an environmentally harmful activity or to avoid an unpopular project. In many cases the final outcome of procedural rights and associated rules on access to justice might be a significant delay in reaching a final decision on a project or a plan. One could of course hope that in such cases the procedural rights may have resulted in a better decision from an environmental point of view – but there are no guarantees that this is the case. This situation may lead authorities to seek ways to escape or limit procedural rights and guarantees, e.g. by pushing controversial decision-making to governmental or even parliamentary level. Furthermore, also citizens may be frustrated if they win a case on procedural grounds, but experience no real change in the final decision. There is thus a risk that general support for

[35] C.Thibierge, (Dir.), "La force normative. Naissance d'un concept", *LGDJ*, Bruylant, Paris, 2009, 891p.

[36] M. Lee, C. Abbot, "The Usual Suspects? Public Participation under the Aarhus Convention", *Modern Law Review,* 2003, 66(1), pp.80-108.

procedural rights and guarantees may be undermined and that concepts of effective justice may be challenged. This paper aims to address such issues primarily on the basis of Danish experiences related to the wind energy projects. Wind energy projects are often highly controversial from a local citizen perspective, which leads to an extensive reliance on procedural rights, as reflected e.g. in appeal cases to the Danish Nature and Environment Appeals Board or to the courts. The paper will discuss the width and implications of procedural rights linked to environmental assessment, public participation and access to justice in view of the Aarhus Convention and EU law. Important questions to be discussed are:

- Do procedural rights lead to the desired outcome?
- What is effective justice – and is judicial review the only solution?
- How to ensure an appropriate balance between procedural rights and effective justice?

• ***Study on the Possibilities for ENGOs to Claim Damages on Behalf of the Environment,*** Elena Fasoli, Queen Mary University of London, Member of the Aarhus Convention Compliance Committee (United Kingdom)

In most Member States of the European Union, only the public administration is entitled to claim compensation for the damages caused to the environment. This is also the approach chosen in the Environmental liability Directive. At the most, ENGOs can challenge the administration's omissions in this respect. Commonly though, they do not have any independant legal means to ask for damages on behalf of the environment. However, in some Member States, you can find tendencies to grant such standing rights to ENGOs in national case law.
In Italy, only the Ministry of Environment (MoE) is entitled to claim compensation for the damages caused to the environment considered as "a public good and as a fundamental right with constitutional status". The MoE can in fact act in the public interest by either starting a proceeding before the civil judge or participating in a criminal proceeding. At the same time, case-law demonstrates that the ENGOs can exercise autonomously the civil action in order to claim compensation for the damages that they have directly suffered. Although they do not act to recover the environmental damage "as an interest of everyone" – as it happens when the action is taken by the MoE – they can claim the material and moral damages that they have directly suffered. These are, for example, the costs of raising public awareness on the environmental damage or the damage deriving from the discredit caused by the failure to pursue the objectives of environmental protection contained in their statute.
Similar case-law seems to have been developed in France, in the Netherlands and in Portugal. In these countries, the right of action can be expressed in law or developed by case-law and can be utilized either by an independent action in court or by joining someone else's action in civil or criminal proceedings. The compensation awarded by the court can either cover the organisations own costs for remedial action, or be directed to the State budget.
A working hypothesis is that this possibility is – or can be developed to – a very helpful legal instrument for improving the effectiveness of the enforcement of environmental legislation. In my presentation, I will inform about the outcomes of the study on this subject, which is conducted under the auspices of the UNECE Task Force of Access to Justice in Environmental Matters under the Aarhus Convention.

- The relationship between (and effectiveness of) administrative instruments, on the one hand, and civil instruments, on the other, for addressing remedial demands to the operators and the role played by the ENGOs;
- How to assure that the damages obtained through court actions brought by ENGOs are effectively used in the interest of the environment;
- Can this instrument be improved at the national, EU or international levels?
- Are there other forms of reparation available?

• ***Revisiting access to justice in environmental matters in the European Union: effectiveness or arrhythmia?***, Vlachou Charikleia, University of Orléans (France) and Athens Bar Association (Greece)

The European Union praises itself for being a " (Union) based on the rule of law[37] ", inasmuch as neither its Member States nor its institutions can escape judicial review. This qualification is however put to the test when it comes to ensuring access to justice in environmental matters. The compliance with the Aarhus Convention, which is legally binding both for Member States and the European Union, has indeed raised concerns within the Aarhus Compliance Committee[38] and the legal community[39]. Given the recent evolution in the case law of the Court of justice two issues need to be revisited.
The first one relates to the restrictions of *locus standi* for non privileged applicants[40], in view of the clarifications given by the Court of Justice regarding the notion of " *regulatory acts*[41] " that are subject to judicial review under the relaxed conditions of article 263(4) TFEU. The second one concerns the availability of judicial review of EU secondary legislation in the light of international obligations and the Aarhus Convention in particular[42]. Two judgments of January 2015 reversing the findings of the General Court and excluding judicial review of EU secondary legislation in light of the article 9(3) of the Aarhus Convention[43] mark indeed a return to the classic restrictive approach of the Court of Justice[44] in this matter.

- To what extent have traditional concerns regarding *locus standi* restrictions in environmental matters been resolved through article 263(4) TFUE?
- Does the interpretation of the Court restricting availability of judicial review under the Aarhus Convention ensure an effective judicial protection?
- What are the implications of an incompatibility of EU secondary legislation to the Aarhus Convention in terms of the international responsibility of the European Union and/or of its Member states both in the current state of law and in the event of a future accession to the European Convention on Human Rights?

• ***Monitoring the Implementation of Environmental Law: The Importance and Challenges of Individual Standing in the EU Legal Context,*** Sanja Bogojević, Lund University (Sweden)

Standing, generally understood, 'is the authority to initiate proceedings against an act'.[45]1 In the EU legal order, standing has an added value in ensuring 'decentralized enforcement' of EU law.[46] The idea is that if implementation of EU law fails at the national level, private actors are able to contest the relevant national

[37] ECJ, 23 april 1986, *Parti écologiste* "*Les Verts*" */ European Parliament*, C-294/83, Reports of Cases 1986.01339, point 23.
[38] See Report of the Compliance Committee, Addendum, *Findings and recommendations with regard to communication ACCC/C/2008/32 concerning compliance with the European Union*, 24 August 2011, ECE/MP.PP/C.1/2011/Add.1.
[39] M. Pallemaerts (ed.), *The Aarhus Convention at Ten: Interactions and Tensions between Conventional International Law and EU Environmental Law*, Europa Law Publishing, Groningen, 2011, p. 440.
[40] A. Albors-Llorens, "Sealing the Fate of Private Parties in Annulment Proceedings? The General Court and the New Standing Test in Article 263 (4) TFEU ", *The Cambridge Law Journal*, Vol. 71, N° 1, 2012, pp. 52-55.
[41] ECJ, 03 october 2013, *Inuit Tapiriit Kanatami and Others / Parliament and Council*, C-583/11 P, (not yet published).
[42] On the Aarhus Convention, see ECJ, 08.march 2011, *Lesoochranarske zoskupenie VLK / Ministerstvo zivotneho prostredia Slovenskej republiky*, C-240/09, Reports of Cases 2011.I-01255.
[43] CJEU, 13 january 2015, *Council of the European Union and Others / Vereniging Milieudefensie and Stichting Stop Luchtverontreiniging Utrecht*, Joined Cases C-401/12 P to C-403/12 P, (non yet published); CJEU, 13 january 2015, *Council and Commission / Stichting Natuur en Milieu and Pesticide Action Network Europe*, (not yet published).
[44] The relevance of the *Fediol* and *Nakajima* exceptions to this case law will be discussed with the audience.
[45] C. Stone, *Should Trees Have Standing? Law, Morality, and the Environment*, 2nd edn, Oxford University press, 2010, p.35.
[46] D. Kelemen, "Suing for Europe: Adversarial Legalism and European Governance'", *Comparative Political Studies,* 39, 2006 pp. 101-102.

law before the courts, which will ultimately lead to the enforcement of EU law.[47] This is important since – similarly to the use of doctrines of direct effect, supremacy and state liability – EU law becomes effective only through its application in the national legal system.[48] Ensuring effective enforcement of EU *environmental* law is arguably particularly pressing, or as worded by Krämer, it is 'the most serious existing problem of environmental law'[49] in part due to the lack of private financial interests in pursuing litigation on environmental matters.[50] Granting broad individual standing rights is often seen as an effective remedy to a serious environmental issue.[51]

Yet the EU courts have consistently found direct private actions inadmissible on the grounds that applicants are not 'directly' and 'individually' concerned by the contested acts – conditions stipulated prior to the Lisbon Treaty[52] and notoriously narrowly defined by the CJEU.[53] The *Plaumann*-doctrine famously confines 'individual concern' to either a decision addressed to the applicant, or a decision that affects the applicant by 'reason of circumstances in which they are differentiated from all other persons and by virtue of these factors distinguishes them individually'[54] – a test centred round the need to showpersonal interest in a case. This is particularly problematic in instances concerning the environment, as the environment, by its nature, represents a collective interest and concerns 'the many rather than the few'.[55] Moreover, environmental cases are often furthered by NGOs[56] that tend to represent rights that are 'common and shared'[57] and not restricted to economic interests.[58] This makes it impossible for environmental NGOs to secure standing before the EU courts – a judicial deadlock made apparent in the *Greenpeace*-case. Here, the environmental NGO was denied standing on the basis that the contested Commission decision, which provided financial support for the construction of two power plants on the Canary Islands, was found to affect Greenpeace, as a representative of its members on the Canary islands, only indirectly. These standing restrictions have significant implications not only for NGOs but also for the effectiveness of the EU judicial system. For instance, collective applicant representations may help 'streamline litigation'[59] and thus reduce the workload of the judiciary. As a result, the time for the litigation procedures may improve. Moreover, allowing broad standing rights for environmental NGOs may help secure effective judicial protection, and subsequently also improve the enforcement of environmental law and administration of justice.[60] The EU judiciary, however, remains strict in its individual environmental standing have also failed.[61]

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[47] R. Slepcevic, "The judicial enforcement of EU law through national courts: possibilities and limits", *Journal of European Public Policy*, 13, 2009, p. 378.

[48] C. Backes, M. Faure, F. Fernhout, "Legal Background" in M. Faure, N.Philipsen (eds), *Access to justice in Environmental Matters, E*leven International Publishing, 2014, pp. 7-10.

[49] L. Krämer, "Public Interest Litigation in Environmental Matters before European Courts", *Journal of Environmental Law*, 8, 1996, p. 1-3.

[50] M. Hedemann-Robinson, *Enforcement of European Union Environmental Law: Legal Issues and challenges,* Routledge Cavendish, 2006, p.160. See also COM(2003) 624 final, at 2.

[51] L. Krämer, *EU Environmental Law* , 7 edn, Sweet & Maxwell 2011, p.397.

[52] The original direct standing provision, Article 173(2) EEC, allowed any natural or legal person to "institute proceedings against a decision addressed to that person or against a decision which, although in the form of a regulation or a decision addressed to another person, is of direct and individual concern to the former."

[53] See for instance K. Lenaerts and T. Corthaut, "Judicial Review as a Contribution to the Development of European Constitutionalism", *22 Yearbook of European Law 1,* 2003, A. Arnull, "Private Applicants and the Action for Annulment since Codorniu" 38 *Common Market Law Review,* 2001.

[54] Case 25/62 *Plaumann v Commission* , 1963, ECR 95, para 107.

[55] Indeed, it could be said that individual interests are "fundamentally antithetical to the environment", see N. Gérard, "Access to Justice on Environmental Matters: A case of double standard?" 8 *Journal of Environmental Law*, 1996, pp.139-152.

[56] For instance, 25 per cent of all environmental litigation in the UK is driven by industry, and similar trends are noticeable also at the EU level, see M. Faure and N. Philipsen, "Summary and Policy Recommendations" in M. Faure and N. Philipsen (eds), *Access to Justice in Environmental Matters,* Eleven International Publishing, 2014, pp. 103-108.

[57] Case T-585/93 *Greenpeace,* 1995, ECR II-2205, para 18-19.

[58] L. Krämer, "The Environment and the Ten Commandments", *Journal of Environmental Law*, 20, 2008, pp.5-6.

[59] C. Poncelet, "Access to Justice in Environmental Matters - Does the European Union Comply with its Obligations?", *24 Journal of Environmental Law*, 2012, pp. 287-300 and A.G. Sharpston, Opinion delivered 2 July 2009, Case C-263/08 *Djurgården-Lilla Värtans Miljöskyddsförening v Stockholm kommun genom dess marknämnd* [2009] ECR I-9967, para 62.

[60] In particular in light of the right to an effective remedy according to Article 47 of the Charter, see G. Winter, "National Administrative Procedural Law under EU Requirements: With a focus on Public Participation" *in* J. Jans, R. Macrory and A.M. Molina (eds), *National Courts and EU Environmental Law,* Europa Law Publishing, 2013, pp.11-29. On the point about sound administration of justice, see V. Luszcz and C. Zatschler, *European Court Procedure: A Practical Guide,* Hart Publishing, 2014, p.115. For a debate on the crucial role of NGOs in successfully enforcing environmental law, see J. Jans and A. Marseille, "The Role of NGOs in

What this discussion illustrates, using broad brushstrokes, is a pretty dire picture of judicial protection in the EU legal order. Upon closer examination, and following the Lisbon Treaty and the implementation of the Århus Convention, what is made visible is that the CJEU, in interpreting *locus standi* provisions, gives expression to judicial subsidiarity. More precisely, by allocating the greater part of the responsibility of guaranteeing judicial protection of individual applicants to the national courts, the CJEU ensures that judicial matters are resolved closer to the citizens.

- Implementation as a measurement of the effectiveness of environmental law
- Implementation of EU environmental law as a key responsibility of the national courts
- The implications of vesting the effectiveness of EU environmental law with national courts

• ***Broader Standing for Private Parties to Increase the Effectiveness of EU Environmental Law,*** Lucas Bergkamp, Partner, Hunton & Williams, Brussels (Belgium)

Even after the changes brought about by the Lisbon Treaty, private parties still have limited standing under EU law to challenge EU environmental law, or the lack thereof, and to seek court rulings on problems in the implementation of EU law.

This presentation reviews three key issues. First, it discusses current standing requirements applying to private parties under European law. Second, it analyzes the implications of private parties' limited standing rights for the effectiveness of EU environmental. Third, it presents and discusses proposals for expanding the standing of private parties and the possible effects on EU environmental law making and implementation.

• ***Effectiveness of Environmental Law in the Case Law on Aarhus Convention,*** Petra Humlickova, Charles University (Czech Republic)

The Aarhus Convention provides for specific human rights in relation to the environment (access to information, public participation and access to justice). These rights are essential for activation of the public, enforcement of environmental law and promoting of its effectiveness, especially in countries with lower enforcement standards from the state authorities.
The Aarhus Convention is considered increasingly in the jurisprudence of the courts. The author argues that the increasing use is an evidence of the effectiveness of this convention and its goals (especially the public as a promoter of the environmental protection). Firstly, the author would like to analyse the case law of the Aarhus Convention Compliance Committee and the Court of Justice of the European Union towards individual member states (e.g. cases Djurgarden Lilla, VLK, Trianel, Gemeinde Altrip). Secondly, the author

Environmental Litigation against Public Auhtorities: Some Observations on Judicial Review and Access to Court in the Netherlands", *22 Journal of Environmental Law,* 2010, p.373, pp.389-390, and AG Sharpston, Opinion delivered on 16 December 2010, Case C- 115/09 *Trianel* [2011] ECR I-03673, para. 67-72.
[61] COM(2003) 624.

would continue in the analysis of ACCC and CJEU case law on primary EU law (e.g. cases Greenpeace, Union de Pequenos Agricultores, Jégo Quéré, Stichting Natuur en Milieu a Vereiniging Milieudefensie).
The relation between international law (Aarhus Convention) and EU law will be closely described on the case ACCC/C/2008/32, which states: *"With regard to access to justice by members of the public, the Committee is convinced that if the jurisprudence of the EU Courts, as evidenced by the cases examined, were to continue, unless fully compensated for by adequate administrative review procedures, the Party concerned would fail to comply with article 9, paragraphs 3 and 4, of the Convention."* Despite these findings, the CJEU continues in the jurisprudence without administrative review and in January 2015, it passed the rulings in joined cases C-401/12P to C-403/12P and joined cases C-404/12P and C-405/12P rejecting requests of NGOs. The compliance of Articles 2(1)(g)(h), 2(2) and 10(1) of EU Regulation No. 1367/2006 with Article 9(3) and (4) of the Aarhus Convention will be discussed.

- The role of the public and laws on public participation or access to justice in effectiveness of environmental law.
- The influence of case law on the law of parties of Aarhus Convention with special emphasis on the European Union as one of the parties.

• ***Adaptive Law. An Approach to Design Effective Environmental Law*,** Jukka Similä, University of Lapland (Finland)

While design is not the only factor affecting the effectiveness of law, it is particularly important because a failure in design might be difficult to correct afterwards. Reflexive and adaptive law theories provide a perspective for the effective design of environmental law. Actually the increased effectiveness of environmental law is a key argument of the proponents of the adaptive law.
The idea of adaptive law arise from the notion that law need to deal with scientific uncertainty, economic, social and political risks, and the dynamic and complex nature of socio-ecological systems. New legal strategies based on adaptive management has been proposed to cope with the complex societal problems with high degree of uncertainty, like climate change. Technological development is a key issue for long-term effectiveness of environmental regulation. Also from this perspective, too rigid regulation is considered problematic. Historically the idea of adaptive law can be linked to reflexive law. The idea of reflexive law, in turn, is driven by the recognition that the potential of conventional regulation is limited due to the cognitive challenges associated with regulatory intervention. The concept of reflexive law was first introduced as a response to the criticism of the interventionist state. The continued expansion of rationalist, bureaucratic regulation was seen exhausting and costly, and potentially reducing the "viability of informal, culturally grounded understandings as the basis for societal self-regulation and cohesion". Reflexive law and adaptive law theorists suggested that the focus of legal regulation should be on the process of communication instead of substantive outcome. Furthermore, they proposed, law would have to be tentative, experimental, and learning, capable of responding to the changing conditions of regulatory implementation. Issues of precision of law, flexible legal rules, predictability and legal security are essential in shaping the forms of reflexivity in law.
The principles of reflexive and adaptive law are appealing for the improvement of the effectiveness of law. The emphasis on learning, reflection, and adaptation appear to meet many of the challenges reducing effectiveness of law. The adaptive law theorists, based on the ideas of the adaptive management, promote an iterative, decision-making processes, where the information from a continuous process of environmental monitoring are used and decisions are adjusted accordingly. The assumption is that even the scientific

knowledge is provisional and as a response to this the decision-making and management structures should allow learning and continuous experimenting. The decision-makers (managers) should remain flexible and able to adapt when they receive new information. Hence, the decision-making structures of adaptive law make possible to respond to changing situations at the "back end," while non-adaptive law (or "front end" decision-making) is designed as if all decisions should and could be made when the impacts and of other changing conditions are not yet known.
In this paper, I will first specify what are the key features of adaptive law, and then present arguments, illustrated by examples, why adaptive law approach is likely to improve the effectiveness of environmental law.

- Particularly complex environmental problems, like climate change or biodiversity loss, require a regulatory strategies, which allow learning and experimentation and make it possible to re-direct the cause of events.

- Predictability and stability are important values for a legal system, but they should not override the need to continuous changes when new information emerge. A key challenge for the future environmental law is how the tension between stability and adaptiveness is solved.

• ***Unmasking and tackling the challenges of ineffective environmental laws in the nuclear sector – a call for inclusive and reflexive regulation,*** Tobias Heldt, Maastricht University (Belgium)

The presented contribution would fall under the first and the second subtheme of the conference by focussing on the one hand on the ineffectiveness of environmental law in the nuclear sector and possible reasons for this (subtheme 1). On the other hand it will also discuss whether the use of different forms of legislation and regulation could tackle such ineffectiveness (subtheme 2).
Unmasking and tackling the challenges of ineffective environmental laws in the nuclear sector – a call for inclusive and reflexive regulation
Nuclear law has during the past not always been regarded as an inherent part of environmental law. Core principles present in the environmental sector have not been entirely extended to the nuclear sector. The Euratom Treaty is still, even more than 50 years after its creation, rather promoting nuclear energy and thereby arguably neglecting an effective control and stricter scrutiny of such a matured sector. Other high risk sectors such as the oil or the chemical sector are more in line with core paradigms of risk regulation such as transparency, reflexiveness and inclusiveness.
When in June 2013 a new Directive of Nuclear Safety was proposed, the draft proposal by the Commission seemed to have the potential to serve as an impetus for a revitalizing and strengthening of risk regulation also in the nuclear sector, allowing a true rethinking and amending of the status quo of nuclear safety within the European Union. The final version of the Directive that was eventually adopted in July 2014, however, had been watered down in the negotiation processes and not all suggested amendments as they were apparent in the original draft were still part of the final version.
This contribution has two main goals: One the one hand, a public choice analysis will serve to illustrate the power structure at the European level. It will be analysed whether public choice theory can explain the ineffectiveness of environmental law, taking the nuclear sector as an example. On the other hand, it will be assessed whether more inclusive and reflexive forms of regulation could enhance the effectiveness of legislation in the nuclear sector by also tackling the challenges arising out of a potentially improper balance of powers at the legislative level.

- Can an improper balance of powers at the EU level (Brussels) be regarded as the source of lawed regulation in the nuclear sector with regard to its robustness and effectiveness?

- In how far can more reflexive and inclusive regulatory approaches increase the effectiveness of environmental law in general and the scrutiny of the nuclear sector in particular?

- ***Evaluation of environmental legislation in the Netherlands,*** Hans Woldendorp, Ministry for infrastructure and environment (Netherlands), University of Gent (Belgium), Institute for Infrastructure and Environment Brussels (Belgium)

This contribution gives an overview of experiences in the Netherlands with evaluation of environmental legislation.
1. There are several examples of legal provisions that require evaluation of legislation.
In the past, there was a formal commission, established by law, with the task to review the application, effectiveness, efficiency and enforcement of the Environmental Management Act. This commission existed from 1980 until 2004. The Commission advised the Minister for the Environment and also reported to the Second Chamber, thus contributing to the supervisory role of the parliament. However, this commission no longer exists. The work of the commission itself in the period 2000-2004 was also evaluated. From 2004-2008 a consortium of the Universities of Maastricht and Amsterdam (2x) together with Arcadis evaluated the Environmental Management Act.
Although at the moment the task of evaluation is not assigned any more to an organisation with a certain degree of continuity, several legal provisions still exist requiring evaluation of environmental legislation.
What has been the experience with evaluation? Did evaluation contribute to better legislation? What was the role of the Parliament in evaluating environmental legislation?

2. I will also provide my personal views about the usefulness of evaluation, as well as some practical tips to improve its usefulness, based on my personal experiences. I will also share my experiences with drafting legal provisions on evaluation of environmental legislation.

3. Evaluation is also criticising. I will take the opportunity to give also my personal experiences with dealing with criticism. As a legislative lawyer I have extensive experience over a period of 25 year. I will give practical tips for handling criticism with the aim to make the most of it.

- ***Science and law in the environmental governance of the Mediterranean basin,*** Clio Bouillard and Guillaume Futhazar, Aix-Marseille University (France)

The role of science and knowledge is particularly salient in environmental law and has been thoroughly discussed by scholars. As it is one of the many prerequisites for the elaboration of relevant rules and their subsequent implementation, science is a fundamental pillar for the effectiveness of environmental law. However, to achieve this goal of effectiveness, the dialogue between law and science has to be constructed in an appropriate way. The purpose of this presentation is to discuss the role of law in shaping this dialogue in the context of the environmental governance of the Mediterranean basin.
This region is a relevant case study for two reasons. Firstly, the environmental threats it is currently facing are numerous. Marine pollution is increasing; overfishing is symptomatic; invasive alien species are causing growing pressure on local biodiversity; the coastal line is degrading[62]… These few examples illustrate how serious and complex are the environmental stakes of the region and highlight the need for relevant expertise in order to deal with those issues. Secondly, from a legal perspective, the region is influenced by an intricate system of overlapping regimes that display diverse purposes and mechanisms. With more than 20 coastal States, this closed sea is subject to many different conventions and legal orders. The Barcelona convention,

[62] UNEP/MAP, *State of the Mediterranean marine and coastal environment*, Barcelona Convention, Athens, 2012, 92 p.

specific to this region, coexists with global treaties such as the Convention on Biological Diversity or the Convention of Migratory Species but also with regional systems such as the European Union. This plurality of regimes results in a tangled network of actors where it becomes uneasy to discern how the dialogue between science and law is being constructed. Given the complexity of the region both from an environmental and legal point of view, understanding the existing framework supporting this dialogue in the region is challenging. Yet, by successfully mapping this framework, it will then be possible to assess it and propose solutions for its shortcomings and therefore eventually increase the effectiveness of environmental law in the Mediterranean basin.
In doing so, we aim at establishing a methodology to assess the efficiency of the dialogue between law and science in the region from a legal research perspective. Relying on the existing research corpus addressing this topic, this methodology will consist in the identification of the relevant criteria for an efficient interaction between law and science and an examination of their existence within the Mediterranean framework. Following this analysis, we will attempt to determine to what extent law can provide useful responses to the identified gaps but also what its limitations are. This latter aspect will underline the importance of interdisciplinary and multidisciplinary approaches to environmental issues. However, this discussion will also illustrate that while effectiveness on environmental law cannot be achieved without an appropriate dialogue between law and science, the existence of such a dialogue unfortunately does not guarantee the effectiveness of environmental law either, even more so in the Mediterranean basin.

- How can we determine, from a legal research perspective, whether the dialogue between law and science is appropriate?

- How can law enhance this dialogue? What are its limitations?

• ***Environmental Inspections in China,*** Yuhong Zhao, Chinese University of Hong Kong (Hong Kong)

In the late 1970s when China, the world's most populous and poverty-stricken nation, decided to shift the state focus from political struggles of the Mao era to economic development, it also embarked on a process of rebuilding its legal system including law-making to facilitate the socio-economic development. Environmental law making started with the Environmental Protection Law (for trial use) of 1979, which was replaced by the Environmental Protection Law (1989) after ten years of implementation. It is supplemented by specialized statutes on air pollution, water pollution, noise, waste management, environmental impact assessment and etc enacted since the 1980s. Over three decades of intensive economic growth has transformed China into the world's second largest economy and a much stronger and more influential member of the international community. However, it is now facing unprecedented environmental challenges of pollution that directly threatens not only the health and safety of its people but also the nation's long-term sustainable development.
The Chinese environmental law has failed to prevent or control the by-products of industrialization and urbanization of unprecedented scale and speed on earth: air pollution, water pollution and land contamination. It is most unfortunate that environmental laws and regulations are enforced sporadically and selectively for reasons ranging from incapacity, unwillingness to corruption and bribery. The environmental laws and regulations are largely and routinely ignored and violated by polluting sources that not only include small and medium-sized township enterprises but also large-scale state-owned corporations. Victims of pollution, potentially affected members of the public and the civil society in general find it extremely difficult if not missions impossible to seek redress or make an impact to improve the environment.

It is against this context that the Environmental Protection Law (1989) was amended substantially in 2014 for implementation from 1 January 2015. This presentation will focus on three key legal developments that will hopefully improve the effectiveness of Chinese environmental law. First of all, the Amendment tries to address the serious problem of weak enforcement due to agency incapacity by expressly granting specific enforcement powers to EPBs which not only include on-site inspection but also seizure and seal-up of equipments and facilities in case of serious violations detected. Secondly, the Amendment tries to reverse the irrational economic signal of low violation costs versus high compliance costs by substantially rewriting sanctions for environmental violations. Sanctions range from monetary fines no longer subject to caps and may be imposed on daily basis to suspension of operation or construction, close down and administrative detention of individuals directly in charge or directly responsible for the violations. Thirdly, the Amendment has made significant progress in facilitating members of the public or civil society to become effective monitor of both governments and polluters in the efforts to fight against pollution. No doubt that public participation and supervision should be a most effective and efficient means to deter administrative inaction and environmental violation if the public has access to information, administrative and judicial redress, and the decision-making process. The Amendment imposes specific legal duties on both governments and enterprises to disclose environmental data in their possession, recognizes the rights of individuals and entities to file complaints against polluters or government bodies to relevant administrative agencies, and grants standing to eligible environmental organizations to file public interest litigations. The presentation will examine the extent to which these key legal developments improve the effectiveness of Chinese environmental law on the basis of a short period of implementation since 1 January 2015.

• ***Environmental inspections and the EU: securing an effective role for a supranational Union legal framework,*** Martin Hedemann-Robinson, University of Kent's Law School, Canterbury (United Kingdom)

A significant long-standing challenge for the development of European Union environmental policy has been the question of how best to enhance the quality and effectiveness of environmental inspections, notably those carried out by national public authorities. The advent of the Union's Seventh Environment Action Programme 2013-2020 (EAP7) has thrust this issue into the political foreground with a specific commitment to introduce 'binding criteria' for effective member state inspections as well as development of inspection support capacity at Union level.[63]

Without a doubt, the role of public authorities in monitoring the application EU environmental law has always been of crucial importance in the quest to ensure proper implementation of EU environmental protection rules. For the roles of the European Commission and private entities, whilst rightly recognised as being significant complementary sources of environmental law enforcement, are ultimately of relatively limited impact when it comes to supervising the practical application of substantive EU environmental requirements. The European Commission has, for instance, signalled since 2008[64] a reprioritisation of its environmental infringement casework under Articles 258/260 TFEU, essentially envisaging it to focus far more on overseeing how well member states ensure that their national laws conform with EU environmental legal obligations and less on issues of non-compliance on the ground (so-called 'bad application' casework). The Union's gradual implementation of the access to justice pillar of the 1998 Århus Convention[65] has undoubtedly developed greater possibilities for private individuals, including notably NGEOs, to engage in

[63] Decision 1386/2013 on a General Union Environment Action Programme to 2020 *"Living well, within the limits of our planet"*, OJ 2013 L354/171, Paragraph 65(iii).
[64] COM(2008)773 final, *Commission Communication on Implementing European Community Environmental Law*, 18 november 2008.
[65] *UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*, 1998.

holding both member states as well as the Union itself to account for breaches of EU environmental norms. However, the impact of the private sector on environmental law enforcement will inevitably remain limited, not least given various resource constraints. In particular, private entities are not usually endowed with legal investigatory powers to gain access to sites suspected of being in breach of environmental obligations and environmental NGOs have limited financial resources to take on environmental law enforcement work. In addition, there is a lack of any clear vested economic interest for market players to underpin or share in monitoring of environmental law enforcement. Public authorities involved in overseeing the application of environmental law, notably through the mechanism of inspections, are not inherently faced with such constraints and as a consequence have a pivotal role to play in ensuring effective application of environmental protection legal obligations.

For several years the EU has wrestled with the politically sensitive question as to whether environmental inspections should be subject to a distinct supranational policy framework. Traditionally, Union member states have been markedly reluctant to conceive of environmental inspections as being anything other than a matter to be determined at the national (or sub-national) level. Their interpretation of the application of the subsidiarity principle in this area, as reflected in positions taken by the Council of the EU, has underlined a strong preference for a decentralised approach. In contrast, the European Parliament and, to a lesser extent, the European Commission have sought to endorse a notably stronger EU dimension to the shaping of policy concerning environmental inspection systems. Gradually, member states have become more receptive to the development of an EU policy remit. Notably, under the aegis of EAP6[66] the Union adopted a non-binding recommendation on environmental inspections carried out by member state authorities in 2001.[67] Subsequently, it has also promulgated a range of environmental sectoral 'hard law' legislative instruments containing various requirements on minimum national inspection requirements. However, so far legislative development has been rather fragmented, patchy and unco-ordinated; certain sectors, such as nature protection, remain without minimum EU legislative standards on inspections. Whilst the EAP7 has now established a clear Union commitment to develop legally binding inspection standards by national authorities, at the time of writing it remains unclear how and to what extent this is to be crystallized into EU legislative format.

In analysing the construction of a Union legal framework concerning environmental inspections, this paper seeks to consider in particular the following aspects and issues:

(1) The historical development to date of EU legislative involvement concerning the area of environmental inspections, analysing in particular Union initiatives and discussions on setting minimum inspection standards for national authorities as well as on construction of EU level inspection systems.

(2) The future development of EU environmental inspection requirements for national authorities under EAP7.

(3) The potential for greater development of environmental inspection roles at EU institutional level.

• ***Environmental Inspectors and prosecutors: is sharing information always useful?*** Carole M. Billiet, Ghent University & Environmental Enforcement Court of the Flemish Region (Belgium), and Sandra Rousseau, Research Center for Economics and Corporate Sustainability, CEDOM, (Belgium)

[66] *Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme* , OJ 2002 L242/1.

[67] *Recommendation 2001/331 providing for minimum criteria for environmental inspections in the Member States* , OJ 2001 L118/41.

The prosecutor's role is often said to be one of the most important in criminal justice systems (Rasmusen et al., 2009). The public prosecutor has a bridging function between criminals, police forces, environmental inspectorates, criminal courts, and possibly also administrative fining authorities. In this contribution we focus on the communication between environmental inspectorates and public prosecutors. We analyse the interaction between both enforcement actors, using a communication model inspired by the sender-receiver model (Shannon, 1948; Weaver & Shannon, 1949), the most basic communication model, and investigate the information exchanges from the environmental inspectorates to the public prosecution (see figure) and their impact on the prosecutor's enforcement decisions.

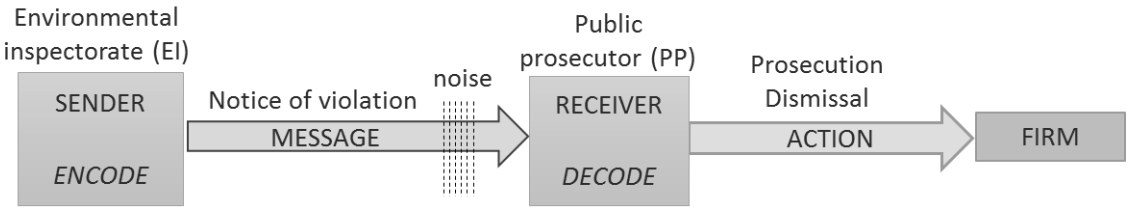

Figure 1: Sender-receiver model

The modeling includes (1) the hypothesis of cheap vs. costly information sending (inspectorates side) and cheap vs. costly information decoding (receiver side, the prosecutor's end) and (2) similarity vs. difference in enforcement goals between sender and receiver / inspectorates and prosecutors. Using the findings of our modeling, we control for the possibility of systematic communication improvements. Our findings allow us to comment on the increasing specialization of public prosecutors in several European countries; on the crucial role of effectively written notices of violation and, more basically, a regulatory design that pays attention to a cost-effective enforceability of norms; and on the necessity for inspectorates when drafting notices of violation to not only care for lowering costs at their side but also at the prosecutor's end.

- Information sharing from inspectorates to prosecutors is not always useful.

- The effectiveness of information sharing is higher when enforcement goals are similar, providing an argument for specialized environmental prosecutors.

• ***Nuclear safety inspections: towards an effective nuclear safety regime***, Emma Durand-Poudret and Claire Portier, Aix-Marseille University (France)

Among all industries, nuclear is the most controlled one. It represents a crucial issue for the public and safety requirements are a worldwide consideration. Therefore, the Fukushima Daiichi accident on 11 March 2011 has put nuclear safety at the forefront of global concern. It forcefully reminded the world that in terms of safety nothing can be taken for granted.
The international framework offers many instruments, which ensure the safe use of nuclear energy. Unfortunately, at the international level, neither the Convention on nuclear safety nor the IAEA standards include the necessary binding means of controls to verify the compliance with those safety provisions.
At the European level, the situation seems to be different. The new EU Directive **2014/87/Euratom of 8 July 2014** harmonizes the nuclear safety rules within the EU countries and provide national regulatory authorities with legal powers regarding the law enforcement. However, it does not create a proper European system as

nuclear safety remains a national issue. As a matter of fact, the IAEA does not represent an international nuclear safety authority, as well as the European Commission is not a European agency.
Then, national regulatory authorities are the only body able to rule that sensitive field and, in order to ensure the enforcement of the relevant law by the operators, safety inspections are performed. Those inspections are a key element in the regulatory authority's effort to ensure the safe operation of nuclear facilities. They also represent the most visible and widespread enforcement tool.
Inspectors are regarded as "nuclear safety policemen" even if the operator is primary responsible of the safety of its installation. They carry out regular control visits and impromptus inspections on every nuclear facility.
According to the Directive, EU member States need to make sure that the national framework entrusts the competent regulatory authorities with several main regulatory tasks, such as verifying through regulatory assessments and inspections, that licensees demonstrate compliance with national nuclear safety requirements and the license itself. In case those requirements are not fulfilled, they shall foresee effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a license.
The nuclear industry is submitted to strict requirements and no discrepancy is supposed to escape the attention of both the operator and regulatory authority inspectors'. However, the Fukushima accident has demonstrated that the existing regime was not sufficiently effective.
It is necessary to determine whether nuclear inspections constitute a sufficient guarantee for the current regime. A comprehensive study of international, European and national regimes will enable us to identify the different strengths and weaknesses of those frameworks and to propose solutions in order to increase their efficiency.

- Do inspections constitute a sufficient tool in order to guarantee the enforcement of the nuclear safety regime ?

- How could it be improved ?

- What can we learn from the Fukushima accident ?

• ***The effectiveness of the EU's legislative framework on environmental crime – insights from an ongoing research project***, Christiane Gerstetter, Development Ecologic Institute (Germany)

The proposed paper summarizes the insights of the ongoing FP7 research project EFFACE – short for "European Union Action to Fight Environmental Crime" – concerning the effectiveness of the EU's legislation addressing environmental crime. In this regard, the core piece of the EU's legislation is Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law; it requires EU Member States to stipulate criminal sanctions for certain particularly environmentally harmful behavior in their national legislation. In this regard, the directive refers to numerous other pieces of the EU's environmental *acquis* as a baseline for the (il)legality of such behavior.
As part of the EFFACE project, researchers have studied the regulatory framework implementing the EU's directive/s in Germany, UK, Poland, Sweden, France, Italy and Spain. Deficiencies in enforcement were among the aspects studied. In addition, EFFACE has produced 12 case studies dealing with various types of environmental crime (each with a link to the EU), the applicable regulatory framework and its short-comings.

Moreover, an analysis of the strength, weakness, opportunities and threats (SWOT) associated to the EU's current approach to fighting environmental crime will be finalized soon.
The paper would summarize the rich empirical insights gained in the project so far, focusing on lessons learnt on the effectiveness of the EU legislation, and invite a discussion on them. Comments received would then feed into finalizing the conclusions, and in particular, policy recommendations of the EFFACE project that will last until March 2016.
Tentatively, a paper could be structured as follows: Section 1) would explain what is meant by "environmental crime" and briefly describe the EU's legislative framework on environmental crime. Section 2) would summarize insights on shortcomings identified in the transposition of the environmental crime directive in the Member States and, more importantly, deficits in enforcement. The section would also include a reflection on why such deficits are likely to reduce the effectiveness of the legislation and how we can know about such a causal link. Section 3) would discuss the reasons for the observed deficits in enforcement which make the relevant legal provisions only partially effective. Section 4) would present the project's insights on what could be done to improve effectiveness, drawing, among others, on discussions on different instruments (e.g. criminal sanctions vs. trust-based approaches) and their comparative effectiveness to this end.
The proposed paper would therefore cover sub-aspects of the following conference topics, always with a focus on EU legislation aimed at preventing environmental crime and the enforcement of this legislation:

- Reasons for the ineffectiveness of environmental law
- Monitoring the implementation of environmental law
- Sanctions

• ***Towards Effective Implementation of the EU Environmental Crime Directive? The case of the waste trafficking and disposal offences***, Ricardo Pereira, University of Westminster (United Kingdom)

The increased cost of safe waste disposal has driven an export trade to many of the world's least developed countries, where there are often gaps and weaknesses in the regulatory framework applicable to the waste disposal sector.[68] Illegal waste imports are widely thought to cross national borders easily, particularly in developing countries which have few inspection systems and technologies available.[69]
The so-called 'eco-mafia' in Italy in many ways personifies the worse forms of environmental criminality in Europe carried out by criminal organisations. Italy's waste disposal contracts are notoriously controlled by criminal groups. According to the Italian authorities 11 million metric tones of toxic and industrial waste are deposited annually in some 2,000 illegal domestic dump sites in local waterways or in the Mediterranean. It was estimated that 11.2 million tons of special waste were illegally dumped in 1999; and that at least 15-20% of waste in Italy disappears annually between production and final storage and disposal.[70] Research by the Italian environmental NGO Legambiente on Italy's 'Ecomafia' shows a far higher than average incidence of recorded environmental crime in the traditional Mafia strongholds of Campania, Puglia, Calabria and Sicily.[71] Among the 1,734 waste-related infractions recorded in Italy in 2002, 39% were committed in those

[68] Frohlich and al, *Organised Environmental Crime in the EU Member States: Final Report*, Betreuungsgesellschaft fur Umweltfragen (BfU) and Partners, May 2003. at 3.
[69] C.W. Schmidt, *Environmental crimes: profiting at earth's expense*, Environ Health Perspect, February 2004; 112(2): A96–103 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241843/pdf/ehp0112-a00096.pdf
[70] Legambiente, *The Illegal Trafficking in Hazardous Waste in Italy and Spain: Final Report*, GEPEC-EC, October 2003, at 21.
[71] *Ibid*.

four regions. [72] Not only in Italy but in the EU Member Sates generally several studies have shown the infiltration of criminal organisations into the waste disposal sector.[73]
In the aftermath of the *Ship-Source Pollution* case,[74] the 2007 Directive proposal on environmental crimes was discussed in the Council of Ministers[75] and European Parliament[76] following the co-decision procedure.[77] The environmental crime directive was finally adopted with minor amendments by the unanimous vote of the Member States represented in the Council on 24 October 2008.[78] However, the provisions on the minimum levels of penalties which were present in the original directive proposal, in line with the ECJ ruling in the *Ship-Source Pollution* case, have been dropped in the text agreed by the three institutions involved in the first-reading legislative process (the Parliament, the Council and the Commission) as well as in the documents that preceded the adoption of the final compromise text.[79] The Commission thereby hoped that harmonisation of environmental criminal law would help improve the implementation deficit of EC environmental legislation and provide a strong deterrent against environmental crimes within the EU.[80]
This paper aims to assess the effectiveness of the implementation of the EU environmental crime directive, focusing particularly on the waste-related offence under Article 3(b) of the environmental crime directive. The adoption of this offence aims to improve the implementation of specific EU environmental legislation, particularly Article 2 (35) of Regulation 1013/2006/EG on shipments of waste in significant quantities,[81] as well as international environmental agreements biding on the Union legal order, particularly the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal of 22 March 1989 which governs the transboundary movement and trade in hazardous wastes.[82]

- which instruments have the Member States applied to implement Article 3(b) of the environmental crime directive?
- are there major inconsistencies in the transposition by the Member States of the waste-related offence under the environmental crime directive?
- to what extent are the penalties applied for implementation of the directive by the Member States 'effective, proportionate and dissuasive,' as require by Article 5 of the environmental crime directive?

[72] *Ibid*.
[73] Final Report: *Organised environmental crime in the EU Member States*, Max-Planck-Institute for Foreign and International Criminal Law, Kassel, 15 May 2003, available at http://ec.europa.eu/environment/legal/crime/pdf/organised_member_states.pdf (accessed on 15 February 2015). See also Final Report Organised environmental crime in a few Candidate Countries, Kassel, 10 September 2003, available at http://ec.europa.eu/environment/legal/crime/pdf/organised_candidate_countries.pdf , accessed on 15 February 2015.
[74] Case C-440/05, *Commission of the European Communities v Council of the European Union* [2008] 1 C.M.L.R. 22.
[75] See for example Working Party on Substantive Criminal Law, *Proposal for a Directive of the European Parliament and of the Council on the Protection of the Environment through Criminal Law* 5152/08 DROIPEN 1ENV 12 CODEC 17 11 January 2008, available at http://register.consilium.eu.int/
[76] European Parliament, Committee on Legal Affairs, *Draft Report on the Directive on the Protection of the Environment through Criminal Law*. 26 February 2008.
[77] The co-decision procedure is set out under Article 294 TFEU (former Article 251 EC).
[78] *Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law*, Official Journal L 328, 6 December 2008, p. 28-37.
[79] Compare Nassaeur's Report (European Parliament) above n. 37 and the several Reports of the Council Working Party on Substantive Criminal Law, for example Council of the European Union, *Proposal for a Directive on the Protection of the Environment through Criminal Law*, DROIPEN 19 ENV 122 CODEC 260 10 March 2008. See also the *Draft Opinion of the EP Committee on Civil Liberties, Justice and Home Affairs for the Committee on Legal Affairs*, Rapporteur Luis Herrero-Tejedor of 15.12.2007 (2007/0022 (COD)). These documents are available at the Council's register: http://register.consilium.eu.int/
[80] See forth Recital to the Explanatory Memorandum to the 2007 "environmental crime" directive proposal.
[81] *Regulation 1013/2006/EG on shipments of waste in significant quantities,* art.2(35).
[82] *Basel Convention on the Control of Transboundary Movement of Hazardous Waste and Other Waste and their Disposal,* 1989.

• ***Assessing the Effectiveness of Sanctions in Environmental Law***, Mark Poustie, Shanghai University of Finance & Economics Law School (China) ; University of Strathclyde Law School, Centre for Environmental Law and Governance (United Kingdom)

This presentation aims to address two of the subthemes of the EELF conference: effectiveness and sanctions. In order to make credible the system of regulation, environmental law generally uses a variety of sanctions either criminal or civil or administrative to help secure compliance. Although there is a very considerable amount of research on how regulators behave in enforcing the law and why they choose particular courses of action[83], there is less research on how regulated or unregulated parties respond to sanctions[84]. So the key question posed by this presentation is: what makes sanctions effective ?

This is an important question since it impacts both on the design of systems of environmental regulation and the types of sanctions which should be provided for and also on ensuring that sanctions have the maximum impact both on the offender in question but also on the wider community in terms of their deterrent effect.

The question is also a complex one because it is not simply an issue about taking more enforcement action and imposing heavier sanctions. It is also about how we measure effectiveness of sanctions. If, for example, one simply looked in isolation at, say, increasing levels of enforcement activity and indeed rising sanction levels it could be wholly wrong to say that those sanctions are necessarily effective. The reverse might in fact be the case since increasing enforcement activity coupled with rising penalties might indicate a failure in the system of regulation. So there is some need to link sanctions with environmental outcomes and environmental quality. One might, for example, postulate that if enforcement activity remains steady and sanction levels increase over a period and environmental quality improves over the same period then sanctions are being effective. Such analysis obviously needs to be heavily caveated given there may be other reasons for changes in environmental quality such as the impact of an economic recession but it might nonetheless provide one indicator of the effectiveness of sanctions in a general sense.

However, in a more specific sense there is a need for qualitative research into what sanctions and what level of sanctions regulated – and, if possible unregulated - parties respond to. This is a much more nuanced area in that within the range of penalties available within a particular type of sanction, one group might respond to a low level of penalty for cultural reasons such as concern about the shame of a criminal conviction within a small community while others might only respond to much higher levels of sanction[85]. The kind of qualitative research needed to ensure an understanding of the impact of particular sanctions and level of sanction will be explored.

The presentation will take a comparative perspective drawing on the presenter's ongoing work on sanctions in the UK and in China. The former is based on a Scottish Government project on Penalties for Wildlife Crime[86] and the latter on the presenter's Oriental Scholar project on the enforcement of environmental law in China.

• ***The ineffectiveness of civil responsibility for environmental damages caused by oil exploitation on the Brazilian continental shelf: the complementary use of the Conduct Adjustment Agreement***, Carina Oliveira, University of Brasilia (Brazil)

[83] K. Hawkins, *Environment & Enforcement,* Oxford, 1984; B. Hutter *The Reasonable Arm of the Law?: Law Enforcement Procedures of Environmental Health Officers*, 1998.

[84] A. Mehta, K. Hawkins, "Integrated Pollution Control and its Impact: Perspectives from Industry", *10 JEL*, 1998, p.61; Ma, Ortolano *Environmental Regulation in China: Institutions, Enforcement and Compliance* , 2000.

[85] P. Q. Wathcman, "River Pollution: A Case for a Pragmatic Approach to Enforcement", JPL*, 1998,* 674p.; K. Fullerton, Unpublished PhD, Napier University, 2004.

[86] See http://www.gov.scot/Topics/Environment/Wildlife-Habitats/paw-scotland/about/groups/penalties-review.

The exploitation of oil on the Brazilian continental shelf has caused serious environmental damages in States such as Ceará, Rio de Janeiro and São Paulo. A great part of these damages are caused by the oil spill related to the activities of the offshore platforms. In this case, civil liability mechanisms have not sufficiently contributed to the prevention and to the reparation of environmental damages. Other public and private instruments must be implemented in order to achieve more effectiveness in environmental protection. Accordingly, extrajudiciary instruments, such as the Brazilian Agreement on Conduct Adjustment, can contribute to the implementation of the environmental protection.

Even if some Brazilian and foreign companies have been sued for environmental damages caused on the Brazilian continental shelf, the Brazilian domestic law is laconic when it comes to repairing an environmental damage. The criteria to prove the causality between a company's acts and an environmental damage have not yet been clearly defined. The difficulty to execute the condemnation decision is also a problem that is not easily solved. The offshore platform's nationality, depending on its flag, is also currently pointed out as a barrier to hold companies responsible for damages.

In this context, extrajudicial instruments can be used as complements of judicial ones in order to improve environmental damage prevention and reparation. The Conduct Adjustment Agreement is a Brazilian legal instrument provided by the Brazilian class action rule. The objective twofolds: the first is to achieve the reparation of the environmental damage by requiring adjustments on the illegal or harmful action caused by a physical or a legal person; the second is to provide for preventive means to avoid future damages The competence to propose the agreement is provided for by the class action law, and namely belong to public prosecutors and public entities. These agreements are constantly used by Brazilian prosecutors in the context of environmental damages. However, there are many gaps which must be carefully analyzed. For instance, there are some agreements that are used to negotiate the limits of the legal protection of the environment, which is forbidden. Indeed, the company's engagement can be very flexible depending on the obligations that are stated in the agreement.

Thus, there are advantages and disadvantages in using this instrument to prevent or to compensate environmental damages. A coordinated use of judicial and extrajudicial instruments is an option which must be taken into account.

- Is responsibility law in Brazil able to deal with environmental damages on the Brazilian continental shelf?

- How the use of extra-judiciary instruments can contribute to the effectiveness of environmental protection of the State's continental shelf?

- Is the Brazilian Conduct Adjustment Agreement able to give more effectiveness to the protection of Brazil's continental shelf