Economic Instruments in Environmental Policies: Expectations met?

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A. Introduction

The use of "economic instruments" in environmental law has become a "command of reason".[1] However, the enthusiasm of the pioneering days in the early 1980s has given way to a more critical reflection, which is slowly[2] but cautiously[3] unfolding. The group of "economic instruments" encompasses three different types: (1) "financial instruments" (use related taxes and fees[4]), (2) instruments that engage with the classic market institutions (contract, property, torts), and (3) instruments that resort to self-governance mechanisms enhancing the environmental performance of firms such as corporate governance requirements, audits, labeling, and due diligence. The latter spur the generation of knowledge which shall either incentivize a specific corporate behavior or inform the consumer's choice. By and large, all types are acknowledged as a complementary, potentially effective [although not exhaustive] part of the modern instrumental mix in modern environmental policies.[5]

Although mainly implemented in the 1990s when deregulation policies dominated public policy making, "economic instruments" were not only founded in privatization. In the early 1980s, two different insights spurred the debate about novel instruments in environmen-

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1 "Postulat der Vernunft", *Wustlich*, ZUR 2009, p. 517 (518), mandatory for everyone who takes environmental protection seriously.

2 For an early explicit criticism: *Ginzky/Rechenberg*, ZUR 2010 (issue 5), p. 252 (252 - 254) who caution against too much optimism with regard to precautionary measures, lobbyism (and interested influence), the invisibility of failures to act, and the terminological captures.

3 See the thoughtful differentiating contributions of *Reid*, C.L.J. 2008, p. 126 (126-144); ibid, *Reid*, C.P.L. 2013, p. 176 (176-185).

4 For a recent comprehensive study about waste water fees and fees on fresh water, *Gawel/Köck/Kern/Möckel/Holländer/Fälsch/Völkner, Weiterentwicklung von Abwasserabgabe und Wasserentnahmeentgelten zu einer umfassenden Wassernutzungsabgabe*, UBA-Studie 2011, download: http://www.umwelt-daten.de/publikationen/fpdf-l/4189.pdf.

5 Gerd took actively part in this debate: Not only did he support PhD-research into economic institutions of environmental protection (e.g. *Köck*, Die Sonderabgabe als Instrument des Umweltschutzes, 1991; *Godt*, Ökologische Schäden, 2007; *Bauer*, Patente für Pflanzen, 1993; *Glinsky*, Die rechtliche Bedeutung der privaten Regulierung globaler Produktionsstandards, 2011). He himself contributed a critical reflection: *Winter/Ginzky/Hansjürgens*, Die Abwägung von Risiken und Kosten in der europäischen Chemikalienregulierung: UBA-Forschungsbericht 297 18 084, Umweltbundesamt 1999; *Winter*, JEL 2009, p. 1 (1-25) (= *Winter*, ZUR 2009, p. 289 [289]).

tal policy. First, major environmental scandals and a deteriorating environmental quality raised doubts about the governments' power to secure environmental quality.[6] The prevailing diagnosis at that time was the so-called "enforcement deficit".[7] It was credited to an overburdened regulatory state[8] and the territorial limits of the nation state in the face of the international nature of environmental goods.[9] The therapy proposed was "economic instruments", which could overcome regulatory capture,[10] internalize the external costs (by property rights[11] and/or liability), and be more apt, both, for the international nature of environmental goods, and for the international structure of the global economic actors. Soon, a wide set of disciplines arose from (classical) "environmental economics" [ecological economics] applying the full range of methods from institutional analysis to econometrics. Second, in legal circles, the idea of the difference between the concepts of "danger" and "risk" became fashionable, resulting into the proposition that economic instruments would be beneficial below the "danger threshold", thus advocating public command and control "above", and private instruments "below" this invisible demarcation. In the course of this debate, economists successfully counseled environmental policy makers – resulting into a new generation environmental policies dubbed "market consistent". Competition law and trade law become integrated into text books on European Environmental Law,[12] reflecting the support of the European Court of Justice for the ecologic transformation of economic institutions.[13] It is only recent that exploding energy prices (while supply is rising), a dysfunctional market of emission rights (too many were issued), regulatory tinkering with liability rules (again, prospectively raising prices), a growing criticism of regulatory overlaps, and a mismatch of a growing appropriation of plant and animal resources in the Global South, while resistance has emerged to further access re-

6 *Winter*, Das Vollzugsdefizit im Wasserrecht: ein Beitrag zur Soziologie des öffentlichen Rechts, 1975; *Winter*, Sozialisierung von Unternehmen. Bedingungen und Begründungen. Vier rechts- u. wirtschaftswiss. Studien, EVA 1976; With various publications, he kept the delicate delineation between the private and the public alive: *Winter*, Bartering rationality in regulation, 1984.

7 E.g. *Winter* (supra note 6).

8 Due to limits of precautionary action [for this argument see: *Franzius*, Die Herausbildung der Instrumente indirekter Verhaltenssteuerung im Umweltrecht der Bundesrepublik Deutschland, 2000, p. 91 ff.], to regulatory resistance in various subsystems [*Trute*, Vom Obrigkeitsstaat zur Kooperation, in: Hendler/Marburger/Reinhardt/Schröder, Vol 48 UTR, p. 36], and to the power disequilibrium (man-power, financial equipment): *Wustlich*, ZUR 2009, p. 515 (517); and Sachverständigenrat für Umweltfragen (SRU), Gutachten 2007.

9 *Koch/Mielke*, ZUR 2009, p. 403 (403); *Wustlich*, Die Atmosphäre als globales Umweltgut, 2003.

10 *Stigler*, Bell J. Econ. Man. Sci. 1971, p. 1 (3-21); *Laffont/Tirole*, Q.J.Econ. 1991, p. 1089 (1089-1127).

11 Transforming „public goods" into items to which exclusionary rights can be assigned.

12 Spearheading was *Jans*, European Environmental Law, 1st ed. 1995; (4th edition 2012).

13 In 1988 and 1992, the ECJ accepted environmental protection as a legitimate public policy reason to restrict of trade in goods (ECJ, Judgement of 20. Sept. 1988- ECR 1987 04607; and ECJ, Judgement of 9. July 1992- ECR 1992 I 4431; in 1998-2003, the ECJ accepted public procurement as an economic instrument for environmental policies:ECJ, Judgment of 13. March 2001- ECR I 2099; ECJ, Judgment of 17. Sept. 2002- ECR I-7213; ECJ, Judgment of 24. July 2003- ECR I-7747.

strictions of the Global North, gave rise to a contemplative and refined debate about prospects and limits of "economic instruments".

Considering the vast array of instruments qualified as "economic", the current article exclusively focuses on instruments that engage with the classical market institutions: property, contract, and liability.[14] For this category, it aims to provide a concise overview. It starts, however, broadly with a brief sketch of the history of "economic instruments", aiming to clarify the term, and identifying the public expectations which have driven economic instruments into environmental policies (II.). At its core, the article analyses six examples, two of each of the three central market institutions. This approach excludes taxes and charges as predominantly governed by public law. It however includes emission "allowances" as proprietary (transferable) emission rights[15] (necessarily framed by public regulation), and liability as a cogent precondition for the insurance system which is in practice a central instrument. It will conceive the transposition of the fixed feed in-prices for renewable energy producers to the end consumer (so called surcharges) not as a tax, but as a form of contract regulation. (III.) It then adopts the bird's eye perspective, and reassesses both, the added value of economic instruments and the down-sides measured against the central yardsticks of international performance, the proper balance of environmental effectiveness and economic efficiency, and democratic legitimacy (IV.). A final chapter draws conclusions (V.).

B. A brief historical sketch of "economic instruments"

G. Hardin's seminal article in Science 1968 demarks the *revirement* in the public debate.[16] As a trained biologist, he drew the interest of his contemporaries to the then prevailing debate in US economic theory on public goods defined by non-exclusiveness and non-commensurability, and identifying the decreasing environmental quality as a problem of insufficient internalization of costs ("Pareto-Optimum").[17] After first focusing on taxes (Pigou; Baumol/Oates), environmental economists soon turned to all kinds of market instruments. Important impulses were set by "ecological economists" such as Niklas Georgescu-Roegen[18] and Herman Daly[19] who inserted the measure of ecological quality into the mere financial equation. The discipline became divided into the two streams of

14 A complementary article will appear in Liber Amicorum [Festschrift für] Götz Frank "Der Rechtsstaat zwischen Ökonomie und Ökologie", edited by E.-W. Luthe/U. Meyerholt/R. Wolf, 2014, focusing on "due diligence".

15 Although sometimes referred to as "public emission rights" or "resource licensing".

16 *Hardin*, Science 1968, p. 1243 (1243-1248).

17 *Coase*, JLE 1960, p. 1 (1-44).

18 *Georgescu-Roegen*, SEJ 1975, p. 347 (347-381); for an apercu of economic environmental thinking *Godt*, Haftung für Ökologische Schäden, 2007, pp. 101-103.

19 *Daly*, Economics, Ecology, Ethics: Essays Toward a Steady-State Economy, 1980.

thought, the pragmatist environmental economists[20] and the more radical ecological economists.[21] The latter started the publication of "Ecological Economics" in 1989 with Elsevier. Modern contemporaries of the pragmatic stream of thought are scholars like B. Hansjürgens, B. Siebenhüner (institutional analysts), and C. Böhringer, H. Welsch (econometric analysts). A scholar who follows the more radical tradition is e.g. Niko Paech. Parallel developments emerged in political science: Political scientists like Martin Jaenicke and Frank Biermann, as well as socio-economist Eleonor Ostrom focused on the rationalities of collective behavior. In the spirit of Polanyi,[22] strong advocacy has emerged demanding that market instruments be embedded in political institutions and control. The narrative of cogent, unconditional propertization as a technical rent seeking tool for the sake of public interests has been opposed by various (ethnographic) examples of collectively owned and managed natural resources, resulting in an understanding of both, a democratic framing of economic institutions and accountability (via transparency and scrutiny) of public policy making.

Thus, what exactly distinguishes "economic instruments" from "command- and control instruments"? Today, the term "economic instruments" has become quite fuzzy. In earlier times, the term only referred to "indirect measures" like charges and taxes, liability, and voluntary commitments. Today, it endorses insurance policies,[23] competition law,[24] public procurement & subsidies,[25] labeling,[26] corporate management systems,[27] deposit systems, property rights,[28] purchase options,[29] easements,[30] certificates,[31] tradable allowances,[32]

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20 Like *Cansier*, Umweltökonomie, 1991; *Endres/Jarre/Klemmer/Zimmermann*, Der Nutzen des Umweltschutzes, UBA 1991.

21 Like Constanza and H. Daly, (see *Spash/Ryan*, CJE 2012, p. 1091 (1091-1121); A German proponent is *Hampicke*, Ökologische Ökonomie, 1992.

22 *Polanyi*, Globalisation and the Potential of Law in Transnational Markets, in: Joerges/Falke, Globalisation and the Potential of Law in Transnational Markets, 2011; *Polanyi*, Per un nuovo Occidente Scritti 1919-1958, in: Resta/Catanzariti (eds.), Per un nuovo Occidente Scritti 1919-1958, 2013.

23 Pathbreaking: *Herbst*, Risikoregulierung durch Umwelthaftung und Versicherung, 1996.

24 For an overview see the competition chapter in *Jans/Vedder*, European Environmenal Law: after Lisbon, 4th ed. 2012.

25 Inter alia: *Griem*, Umweltaspekte bei der Vergabe öffentlicher Aufträge, 2002.

26 E.g. the RSPO-label resp. environmentally sustainable palm oil production, *Balitzki*, GRUR 2013, p. 670 (670).

27 *Engelfried*, Nachhaltiges Umweltmanagement, 2nd ed. 2011.

28 *Gray*, Syd. Law Rev. 2011, p. 221 (221-241).

29 *Reiff*, NuR 2011, p. 90 (90).

30 For the UK: *Reid*, JEL 2011, S. 203 (203-231); For the US: *Korngold, Utah L Rev.* 2007, S. 1039 (1039-1084); *Owley*, Stanford Envtl.L J 2011, p. 121 (121-173).

31 *Müller*, Umweltzertifikate als ökonomische Steuerungsinstrumente und ihre Auswirkungen auf kleine und mittlere Unternehmen: eine vergleichende Untersuchung der Steuerbarkeit von Flächenversiegelung und Wassernutzung in Deutschland und den USA, 2010; *Hansjürgens*, Das Instrument handelbarer Umweltzertifikate, in: Köck (ed.), Handelbare Flächenausweisungsrechte, 2008, p. 61-77.

32 *Colangelo*, Creating Property Rights, 2012.

commonhold rights.[33] Thus, the term "economic instruments" encompasses classic financial instruments of public law, *and* market institutions alike. What then does "economic instruments" qualify?

As a common feature, "economic instruments" and "command-and-control instruments" address the problem of environmental goods as being "public goods", by definition being non-excludable and non-rival, thus prone to depletion in the absence of *either* commodification *or* state control. This binary code of the public-private divide dominated the discussion for years. What is the right delineation (or mixture) between private disposition and public regulation? Important to the demystification of the delineation of the two realms was Nobel Prize winner E. Ostrom. She challenged both, the commodification *and* the regulation narrative by assessing the legal set-up of "the commons".[34] Ostrom performed empirical research on collective regimes of managing natural resources, and asked for conditions for success. The results rebutted the theory that public goods necessarily deteriorate in the absence of *either* commodification *or* state control. Her mission was that collective decision making is – under a set of specific conditions – possible beyond the market and the state.[35] While Ostrom is well received in circles of environmental lawyers, the implications are contested. Gerd Winter, e.g., contends that Ostroms' theory is only applicable to natural resources which can be overused, and for which physical exclusion is possible.[36] He argues that Ostroms' theory is applicable only to classic *tangible* environmental goods. For other environmental concerns (true "public goods") public decision making remains necessary. His analytic core argument is that certain public goods like genetic information, unlike tangibles, *improve* by broad use; the normative implication is the intact open public sphere. However, considering the complex mixture of public goods in tangible natural resources like the recreational function of inner city village greens,[37] the delineation of tangible and intangible resources is not evident either. In addition, it does not fully catch the spirit of the contemporary commons debate which is interested in strengthening both, environmental quality and a participatory process which brings in new actors to the decision making process.

What, in legal technical terms, distinguishes "economic instruments" from "command-and-control"? For a long time, the delineation was drawn with respect to the actors. If the state

33 *Clarke*, Creating New Commons: Recognition of Communal Land Rights within a Private Property Framework, CLP 2006, p. 319 (319-357).

34 Proponents are scholars like historian Tine De Moor (http://www.collective-action.info), legal comparatist Hugo Mattei (http://works.bepress.com/ugo_mattei/40/), political activists like *Helfrich/Bollier* (eds.), Commons, 2012.

35 *Ostrom*, Annu Rev Polit Sci 1999, p. 493 (493-535).

36 *Winter*, Common Pools of genetic resources and related traditional and modern knowledge, in: Kamau/Winter (eds.), Common Pools of Genetic Resources, 2013, p. 4 et seq.

37 *Godt/Clarke*, Comparative Property Law: Collective Rights within Common law and Civil Law Systems, in: Godt (ed.), Cross Border Research and Transnational Teaching under the Treaty of Lisbon – Hanse Law School in Perspective, 2013, pp. 61-81.

acts vertically vis-à-vis the citizen, then the legal relationship is "command-and-control". If however, the state acts horizontally vis-à-vis a citizen, or regulates the relationship between private actors, the policies are coined "economic instruments". However, since public law does not restrict permits to *specified* actors any more, tradable rights ("allowances") have equally conceptualized as "*public* law instruments". Inverse, public procurement and state aid have become contingently assigned to [*private*] competition law or public law.[38] Therefore, a novel approach which transcends the public-private divide is needed. I propose to qualify two functional categories as crucial: "availability" and the "prize mechanism" (often dubbed as "voluntary"): Availability depends on bilateral consensus (commodity function) depending on the complementary willingness of the seller to sell and the willingness of the buyer to invest (prize-mechanism). This *bilateral* construct is central. (1) It implies the possibility for the seller or the company to say "no". This "right to say no" is central to the market paradigm (private autonomy). Limits "to say no" are only set by competition law in monopoly situations if the exchange system as such is put at risk (Art. 102 TFEU "misuse of a dominant position"). Thus, instruments which incentivize the production of knowledge can, as a matter of default, be qualified as "economic", whereas instruments which oblige to produce information are to be qualified as "command-and-control" (even if potential users of the information, like consumers, remain free to use the information). (2) The prize mechanism is supposed to steer the optimal allocation of use rights (a high prize might overcome the unwillingness to sell; a prize too high might stifle the willingness to buy). The ideal is optimal resource allocation. Risks to third parties are not "justified" (implying that third parties/competitors might defend their interests directly, and that external costs are to be internalized by direct litigation [liability]).

Considering that modern environmental regime are all "mixed", it is contingent which legal set of default rules (public or private) is chosen. Modern economic instruments face just the very same resistance as command and control instruments. The true contemporary challenges are threefold, effectiveness with regard to environmental quality, democratic legitimacy together with environmental justice, and international effectiveness. These are the essential yardsticks which qualify "economic instruments" as environmental policies. They will be employed (under IV.) after the six exemplary institutions are presented.

C. Market Institutions in Environmental Regulation

Six exemplary instruments shall be explored, two of each of the three central market institutions "property", "contracts" and "liability". They span across four sub-disciplines of en-

38 The rationale of the *PreußenElektra* ruling which qualifies the financial mechanism as "non-aid" simply because the financial means is not derived from the public budget seems utterly technical, and is currently under scrutiny by the European Commission, O.J. C 128/43 (3. May 2013).

vironmental law: climate change (case 1) and biodiversity (case 2), renewable energy (cases 3 and 6) and nature conservation (cases 4 and 5).

I. Property

Two property rights have recently been introduced, emission rights in climate protection, and "biodiversity rights".

1. Emission Allowances (Climate): Case 1

The EU Directive 2003/87/EC [39] established a system of tradable CO_2-emission rights ("allowances"),[40] and was transposed to German law by the 'Treibhausgas-Emissionshandelsgesetz (TEHG) (CO_2-Emission Trading Act) 2004.[41] The assignment of rights according to the national plan was regulated by the "Assigment laws" (Zuteilungsgesetze) 2007 and 2012.[42] The essence of these rights is their tradability. That means that in theory costs rise with demand. The reason to install the prize mechanism is to reap efficiency gains. External costs may be reversed once either third parties violate the limits of the right, or vice versa once the right holder exceeds the limits defined by the right. The core function of tradability qualifies these rights as "property rights", acknowledged as such in most of European countries.[43] Only in Germany, due to a Kantian tradition of property as stronghold of individual freedom,[44] these rights are conceptualized as "tradable public allowances", predominantly discussed in public law. The notorious problem with the current regulatory scheme is that too many rights were issued rendering the market unfunctional. This failure is purely regulatory, and does not teach a lot about the potential performance of "economic instruments". The actual fierce debate about "back-loading"[45] mirrors national economic preferences, which have little to do with environmental concern. The EU Commission proposed to withdraw (by postponing the sale of) 900 million Euro-

39 Off. J. L 275/32 of 13. October 2003.

40 *Romeo*, Informationsbedarf und Informationsinstrumente des betrieblichen Emissions-managements: Eine Analyse im Rahmen des europäischen Handels mit Treibhausgas-Emissionszertifikaten, 2012.

41 „Treibhausgas-Emissionshandelsgesetz" of 21. Juli 2011 (BGBl. I p. 1475), latest revision by Art. 2 sec. 24 of Legislative Act of 22. Dec. 2011 (BGBl. I p. 3044); including establishing the German trading board at the Environmental Protection Agency (issuance and control of allowances).

42 Criticized by *Winter*, The Climate is No Commodity: Taking Stock of the Emissions Trading System, J Environm L 2009, p. 1 (1-25); for a more technical analysis of privileges: *Schlacke/Kröger*, Die Privilegierung stromintensiver Unternehmen im EEG Eine unionsrechtliche Bewertung der besonderen Ausgleichsregelung (§§ 40 ff. EEG), NVwZ 2013, p. 313 (313-318).

43 UK High Court, Judgment of 17 Oct. 2012, [2013] Ch 156.

44 Rendering the instrumentalization of property for other purposes then individual prosperity (here environmental protection) incommensurate with the concept of property, *Alexander/Pealver*, An introduction to property theory, 2013, p. 70 et seq. For the very parallel individualistic conceptions of property in the French and Italian tradition see *Praduroux*, The Protection of Property Rights in Comparative Perspective, 2013, p. 123 ff.

45 Reducing the number of emission allowances by postponing the next auctioning (2013) for the trading period 2013-2015 to 2019.

pean Union Allowances (EUAs),[46] and the EU Parliament finally approved it after heated debate on 3. July 2013. To conclude, the current scheme does nothing to teach us about the effective performance of proprietary resource licenses. When it comes to economic restrictions, economic instruments and command-and-control-mechanisms share the same political resistance.

2. Access and Benefit Sharing (Biodiversity), Case 2

After the Convention on Biological Diversity (CBD) had set up a novel system of sovereign control over genetic resources in 1992, the so-called Nagoya-Protocol to the CBD of 2010 (NP)[47] will make a regime on "Access and Benefit Sharing" (ABS) with regard to the utilization of biological resources legally binding. Its implementation in the EU is under way.[48] At its core is a bilateral exchange mechanism modeled on proprietary disposition which substitutes the former public good paradigm for biological and genetic resources.[49] This amounts to a paradigmatic shift which has not been successfully communicated,[50] and remains contested until today.[51] It aims at a bilateral (trans-border) communication between "the provider" (the provider state or entitled communities) and "the user" of genetic/biological resources. The prospects of future financial returns shall set an incentive for biodiversity preservation. The mechanics are modeled on a mixed regime of patent rights and a transnational business tax. The mechanism refers to the patent system as far as the exchange between "access" and "benefits" is not immediate (compared with a simple acquisition). The right to grant access is designated to channel a financial stream back to the "provider" based on economic performance (like IP-license based royalties). As long as the country of origin assigns the right to the state, this financial back-stream looks like a "remote tax".

46 EUROPEAN COMMISSION, 14.11.2012, COM(2012) 652 final.

47 Protocol download: http://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf, commentated by *Winter/Kamau*, AVR 2012, S. 373 (373-398); *Winter/Kamau* (supra note 38); *Morgera/Buck/Tsioumani* (eds.), The 2010 Nagoya Protocol on Access and Benefit Sharing in Perspective, 2013.

48 Communication "Proposal for a Regulation of the European Parliament and the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union, COM (2012) 576 final (4. October 2012), commented by Kamau Dez. 2012 (on file with the author).

49 Thus, it complements other private instruments for biodiversity explored by *Reid*, JEL 2011, p. 203 (203-231).

50 In Germany mainly understood as a [modern] convention on classical [command and control] nature protection, see e.g. *Wolff/Köck* (eds.), 10 Jahre Übereinkommen über die biologische Vielfalt, 2004.

51 Gerd Winter criticizes the notion of bilateral exchange. He argues that the restrictive access rules in provider states strangle basic research (*Kamau/Winter*, Streamlining Access Procedures and Standards, in: Winter/Kamau (eds.), Genetic Resources, Traditional Knowledge and the Law: solutions for access and benefit sharing, 2009, p. 365), and that bilateral exchange structure undermine public, open knowledge exchange structures (*Winter*, Knowledge Commons, Intellectual Property and the ABS Regime, in: Kamau/Winter (eds.), Common pools of genetic resources, 2013, p. 285); for a counter position see T. Stoll (oral position voiced on 16. 2. 2008; DFG-Projektworkshop „Recht und Praxis des Zugangs zu genetischen Ressourcen und des Vorteilsausgleichs - am Beispiel Kenias, Brasiliens und Deutschlands") who rightfully conceives the ABS system as a transnational tax.

The ABS-mechanism has undergone a remarkable shift under the recent NP-negotiations. When the Convention was negotiated, it was the prevailing notion that "the" ABS-mechanism follows the UN-FCCC-model of "joint but differential" duties. Benefit sharing duties would be complementary to access duties,[52] and it was understood that access duties are to be regulated by access states, and benefit sharing duties would mainly rest on (private) manufacturing industries [sic. companies which generate financial benefits]. The Nagoya-Protocol further differentiates the duty to acquire prior informed consent for access and the duty to share benefits. Art. 6 NP requires only those to seek prior informed consent who "utilize genetic resources" defined as "conduct[ing] research and development on genetic resources" in Art. 2 lit c Nagoya Protocol 2010. In contrast, Art. 5 NP, compliant with Art. 15 sec. 7 CBD, requires "[...] benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared [...]".[53] That means benefits are to be shared by commercial and other utilizers of genetic resources. The novel separation re-shovels responsibilities. "Accessors" (those who access) are *primarily* responsible for assuring that access requirements are met, but not for securing the future sharing of benefits. Utilizers are *primarily* responsible for sharing benefits, but not for securing that access requirements were met.

The novel normative split has three consequences. First, the accessor (mostly bioprospectors and scientists) is relieved from negotiating the sharing of benefits. He/she has (only) the reasonable duty to exert due diligence that information about access and mutually agreed terms is conveyed. The subsequent utilizer is relieved from access compliance, and is only under the reasonable duty to exert due diligence that only legally accessed resources are used.[54] Second, the split creates an information delta. The unitary duty to secure "access and benefit sharing" is dissolved into two separate duties which follow each other in time. However, the utilizer in order to fulfill is sharing duty needs to know with whom and which ABS requirements were negotiated at the time when the resource was accessed. Visa versa does the provider need to know *who* (finally) utilizes and commercializes the resource. However, no mechanisms are put in place which secure the transfer of information along the trade chain (record keeping) or allow some kind of monitoring by providers. Neither is the existing examination procedure of patent offices (and their technical documentation), nor the existing approval procedures used to disclose the infor-

52 *Godt*, IPRs and Environmental Protection after Cancún, (Conference Paper Nov. 2003), download: http://ecologic-events.eu/Cat-E/en/documents/Godt.pdf and http://www.uni-oldenburg.de/wire/rechtswissenschaften/eurowr/cgodt-publikationen.

53 Art. 15 sec. 7 CBD reads: "Each Contracting Party shall take [...] measures [...] with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. [...]."

54 The European proposal submits the user to "exercise due diligence to ascertain that genetic resources [...] were accessed in accordance with access and benefit sharing [regulations ...]. Users shall seek, keep and transfer [...] information relevant for ABS" (Art. 4 sec. 1 EU proposal). A strict prohibition is not stipulated.

mation about use, providence, and mutual agreed terms. Information about use in user states is not made transparent and accessible. Under these structures, providers have no means for structured monitoring and tracing allowances for use and therefore depend on accidental discovery of use and commercialization. Third, the split "re-nationalizes" the implementation duties in a double sense. In terms of public international law, it assigns territorially the responsibility for access regulation to the provider state, and for benefit sharing to user states. Notwithstanding, a party might be both a "provider" and a "user" state. However, parties are not "mutually responsible" for install a functional mechanism of access and benefit sharing between providers and (private) users. The split allows user states to focus on "user" regulation (and conceive the safeguarding of provider consent a task of provider states). In addition, it "re-nationalizes" enforcement duties in that it assigns the enforcement primarily to the states (and neglects that "providers" may wish to enforce their claims internationally - be they public or private entities).

Preliminary experience with the ABS-mechanism has shown that the alignment of access and benefit sharing over a time span of years is difficult. How could providers keep track about who finally utilizes a given resource commercially? How could industry secure that resources were initially accessed according to their needs? Under the original normative idea of bilateral exchange of granting access in exchange of benefit sharing, benefit sharing becomes only functional in conjunction with prior informed consent. While it is true that in the real world access and benefit sharing are separated in time, and executed by different people, the legal split of duties exacerbates the information dilemma, and opens up the regulatory scheme for strategic behavior of both, user states and user companies. This puts the functionality of the regime at risk.

3. Conclusion

"Property rights" as instruments of environmental law are of a hybrid nature. Their functional core is tradability (thus aiming at autonomous exchange governed by the prize mechanism); however, their design is regulatory. For the system to function by setting prize signals, allowances have to be scarce compared to the demand (not redundant), and the disposition right needs to be linked with profitability. Contractual exchange needs to be established between those who enjoy disposition rights and those who wish to use. These functional preconditions have not been successfully established by regulators, both in the case of carbon allowances and of Access and Benefit Sharing.

Are these property regimes superior to "command and control" policies? To the extent that we employ private law rules to "economic instruments", we may assume a ubiquitous recognition of these rights, and a free disposition of the "provider" to allow access according to her preferences. Limits might be forced on the right holder under competition law. In contrast, command and control under a public law frame limits potential actors to the territorial sovereign. It restricts the effect of the decision (the permit) to its territory, and forces the government under the rule of law to condition the decision in advance (free

disposition would equal arbitrariness). As with all constructed markets (like the energy and the telecommunications market[55]), the private-public tension provides the interpretation frame.

With regard to biodiversity rights, the CBD is not clear as to whom the rights are assigned (the state or private entities), and under which conditions access can be denied. This ambivalence has created major problems of acceptance, both domestically and internationally. The contested debate about "commodification of biodiversity" is part of these frictions. Conceptually, the instrument is a chameleon. Since in common law countries the exchange function is firmly linked to the idea of property, the ABS-discourse is dominated by lawyers specialized in "private law". In countries like Germany, both, the ABS-right is conceptualized as a public access permit.[56] Therefore the debate takes place in public law circles exclusively - with ramifications on the technical transposition of international conventions into national laws. Similarly, the emission right is conceptualized as "property" under English common law.[57] There is international uncertainty as to which rules to apply to "property" as economic instrument.

The two examples unearth the challenge that property instruments in environmental law are entangled with economic modeling and remote contracting. What is the right price? For private lawyers this question is traditionally unanswerable. From a regulatory point of view, the question demands an answer for the sake of functionality. The debate forces lawyers to engage with economic modeling which substitutes the intricate problems which environmental law earlier experienced with extralegal qualifications of natural scientists by extralegal qualifications by economists. Thus, environmental law will not evade the "expert knowledge" challenge by shifting from command and control to market instruments. This insight re-directs the attention to legal normative standards and values, like legitimacy and proportionality (including the suitability test, infra IV.2).

II. Contracts

Two contractual regimes have turned out as successful environmental instruments, the production of green electricity, and conservation contracts – again both legal hybrids between private and public law.

55 Illustrative for the telecommunications sector *Franzius*, DÖV 2013, p. 714 (714).

56 In more depth *Godt*, Enforcement of Benefit Sharing Duties in User Countries Courts, in: Kamau/Winter (eds.), Genetic Resources, Traditional Knowledge & the Law - Solutions for Access & Benefit Sharing, 2009, pp. 419-438.

57 High Court, Judgment of 17 Oct. 2012, [2013] Ch 156. In contrast, fishing quotas were rejected as "property rights", High Court, Judgment of 10. July 2013, [2013] EWHC 1959 (Admin).

1. Renewable Energy , Case 3

The central instrument of the German Renewable Energy Code (Erneuerbare Energien Gesetz[58]) is the reversal of additional production costs for renewables to the consumer.[59] The instrument can be either described as a charge (included in the energy prize by the network operator; in German: "EEG-Umlage" or "Wälzungsmechanismus"), or a contractual regime (with a prize guarantee for the producer which will be financed by the end consumers). The 20-years price guarantee for feeding renewable energy into the grid (German: "Einspeisevergütung") is linked to the priority of green electricity in the ranking of power plants put on to the grid (it reversed the called "merit-order" from mere financial to policy criteria). The actual charge is the result of the estimation of several components.[60] In 2012, a further incentive, again financed by a cost-reversal system, complements the system in that it encourages producers to sell energy directly.[61]

The novel merit-order has produced paradox effects on the consumer energy prize. Once the energy prize dropped at the energy exchange (EEX) due to successful wind energy production off shore, the differential to the secured energy prize grew, and thus the amount to be reversed to the consumer, resulting into a rise in energy prizes for consumers *although* the spot market prize went down.[62] That effect created severe criticism and reduced public acceptance of the renewable energy policy ("EEG-Umlage" resulting from the "Einspeisevergütung"). This criticims, in turn, prompted several revisions of the mechanism.[63] However, the privilege of industrial high volume consumers remained highly controversial. Until 2011 only 10 GWh-plants were defined as "high volume consumers" and thus exempt, the 2012-revision reduced the level to 1 GWh, thus excluding many more industrial plants resulting into an increase of 33 % of the prize reversal (EEG-Umlage).[64] This move was criticized for reasons of industrial policies, competition law,[65] regulatory capture, constitutional concerns.[66]

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58 Revised as EEG 2012 (28.7.2011) by BGBl I, 1634.

59 *Magen*, Recht und Markt 2009, p. 9 (9-28).

60 (1) Financial aid, (2) liquidity reserve, (3) market prime, (4) industrial privileges: http://www.bee-ev.de/_downloads/publikationen/sonstiges/2012/121026_BEE_Hintergrund_EEG-Umlage-2013_aktualisiert.pdf, p. 6.

61 *Lehnert*, ZUR 2012, p. 4 (4-16).

62 *Deutscher Bundestag*, EEG Erfahrungsbericht 2011, BT-Drs. 17/6085, 4.

63 Gesetz zur Neuregelung des Rechtsrahmens für die Förderung der Stromerzeugung aus erneuerbaren Energien 2012" Bundesgesetzblatt Teil I, Nr. 42 (4. Aug. 2011), p. 1634.

64 *Heide*, Die wichtigsten Fragen zur Erhöhung (15.10.2012), in: http://www.handelsblatt.com/politik/deutschland/eeg-umlage-die-wichtigsten-fragen-zur-erhoehung/7254574.html.

65 The Regional Court (OLG) Düsseldorf requested a legal opinion about its compliance with Art. 107 TFEU from the European Commission in two cases on 27. August 2012, Az. VI – 3 Kart 65/12 (V) and VI – 3 Kart 14/12 (V).

66 Whereas some scholars categorized the mechanism as „constitutional" (e.g. *Schlacke/Kröger*, NVwZ 2013, p. 313 (313-318); *Kachel*, ZUR 2012, p. 32 (32-39); others criticized it *inter alia* for undermining

2. Contract Conservation, Case 4

In 2010, the federal Bundesnaturschutzgesetz gave contractual conservation priority to other "command-and-control" instruments by § 3 sec. 3 BNatSchG (at least as a duty to inquire[67]). Its core are contracts between agencies and private individuals, who commit to duties in favor of nature conservation,[68] including production measures in agriculture.[69] Rehbinder cautions against an "either-or" approach (though seemingly commanded by EU-state aid regulation, and fiercely opposed by the German second constitutional chamber (Bundesrat)[70]), and advocates a mixed model of public securities and material and practiced care.[71] Frenz, mirroring the US & Scottish approach to conservation easements,[72] praises conservation contracts for their participatory function.[73] Rehbinder points to NGOs being both contractors or land owners (an important difference to the US-easements). Overall it seems that contract conservation has matured from a tool by which citizens are made to conserve nature into one by which citizens legally secure the fruits of their volunteer work.

3. Conclusion

Contractual instruments seem to have operated quite successfully in environmental policies. The primary function is to set an incentive for private action. On the first glance, they provide an alternative to common practices which will enjoy a special public support. A factor of success seems to be that they aim at fostering economic activity instead of reducing it – compared e.g. to emission rights.

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the rationale (e.g. *Ziehm*, Ohne Solidarität keine Energiewende, ZUR 2012, p. 585 (585 f). On 18. Dec. 2013, the European Commission opened an in-depth investigation into the scheme questioning the conformity of the exemptions with European Unions state aid rules.

67 *Rehbinder*, Vertragsnaturschutz in FFH-Gebieten: Ein Spagat zwischen beihilfe- und naturschutzrechtlichen Anforderungen, in: Appel/Hermes/Schönberger, Öffentliches Recht im offenen Staat: Festschrift für R. Wahl, 2011, p. 543 (558).

68 *Windstoßer*, Vertragsnaturschutz, 2008, p. 34. Few include the aquisition of valuable land, so does *Rehbinder*, DVBl 2000, S. 859 (860); on the inclusion of the priority acquisition right of the Laender in the BNatSchG-revision 2010 see *Reiff*, NuR 2011, p. 90 (90).

69 This broad definition deserves preference, following *Rehbinder*, Vertragsnaturschutz in FFH-Gebieten: Ein Spagat zwischen beihilfe- und naturschutzrechtlichen Anforderungen, in: Appel/Hermes/Schönberger, Öffentliches Recht im offenen Staat: Festschrift für R. Wahl, 2011, p. 543 (543).

70 *Krohn*, § 3, in: Schlacke, Gemeinschaftskommentar zum Bundesnaturschutzgesetz, 2012, para. 44.

71 That way also bypassing "legitimacy problems" of pure private solutions, criticism voiced by *Korngold*, Utah L. Rev. 2007, p. 1039 (1060).

72 *Owley*, Vt. L. Rev. 2012, p. 261 (261- 302); *Reid*, JEL 2011, p. 203 (203-231); *Korngold*, Utah L. Rev. 2007, p. 1039 (1039).

73 *Frenz*, NuR 2011, p. 257 (259).

III. Liability

Liability regimes, both contractual and tort liability, are conceived as prime internalization mechanisms for external costs. Due to the broad existing literature about tort "environmental liability", a brief sketch of it will suffice (case 5); while the example of a contractual liability will be explored in more detail in case study 6.

1. Tort Liability, Case 5

A broad overview about modern environmental liability law was published recently, both for German law (exploring complementary collective liability regimes as well),[74] and for European law.[75] In practice, the core actors in liability to implement environmental standards are the insurers.[76] They translate potential ex post costs in ex ante behavior by differential insurance tariffs, by risk mitigation and counseling. Very puzzling, most environmental law text books and dissertations about economic measures do not cover environmental insurances, although they play a dominant role in practice and in legislation (e.g. EU-Environmental Damage Directive). They were key-actors in funding the clean-up of brown fields in Europe (though much more discrete than the Superfond-model in the US). This experience made them anxious, and triggered their engagement in legislative projects. For long, they successfully opposed the extension of the liability scope to "pure" environmental damages arguing with un-insurability.[77] They mastered to keep excluded a mandatory duty to regulate environmental damages resulting from publically authorized behavior in the new EU-Directive on Environmental damages,[78] and a mandatory corporate responsibility of dominant firms for independent, but hazardous daughter firms.[79] Thereby, insurers are released from the system, and the environment lost an important risk mediator up front.

2. Contract Liability, Case 6

An interesting example of a regulatory contract liability rule was introduced by § 17e EWG (German Energy Industry Code) in December 2012. It reverses the burden of proof for transmission delay which is caused by the retarded connection to the Grid. Conceptually, it

74 *Godt*, Zivilistische Haftung von und in Unternehmen für Umweltschäden, in: Hecker/Hendler/Proelb/Reiff (eds.), Verantwortlichkeit und Haftung für Umweltschäden, 2013, 237-256.

75 *Cassotta*, Environmental damage and liability problems in a multilevel context: the case of the Environmental Liability Directive, 2012.

76 *Herbst*, Risikoregulierung durch Umwelthaftung und Versicherung, 1996.

77 *Godt*, Haftung für Ökologische Schäden, 1997.

78 Technically, the directive stipulates an option to include the coverage of damaged caused by authorized behavior.

79 A problem especially troublesome in cases of insolvency, see *Mamutse/Fogleman*, Journal of Business Law, 2013.

is a complementary example to the liability cap for atomic energy liability.[80] Whereas damages beyond the cap will fall upon the tax payer, the new § 17e EWG imposes damages in case of disruptions or delays of the connection of off-shore wind mills to the energy grid,[81] and reverses the additional costs to the consumer.[82] The construction is similar to case 1.

3. Conclusion

Liability rules are regulatory in nature, and set important signals for environmentally beneficial behavior. As both examples highlight, their effects are not homogenous. The new EU-directive about environmental damage serves as an example of a negative signal. It allows member states to discharge companies from the risk to be held liable for damages caused by authorized emissions, and releases integrated companies to be held liable for damages resulting from outsourced activities. Thus, it sets an incentive not to monitor emissions below regulatory thresholds and emissions of subsidiaries. The contractual liability under § 17e EWG unfolds a different regulatory effect. It collectivizes the economic risk of off-shore operators. In this sense, it is a subsidy to the off-shore industry in disguise of a market-based instrument. In sum, the liability examples teach us the dependency of economic instruments of the regulatory frame.

D. Taking Stock: Challenges to the Private-Public-Interface

I. Re-phrasing the question: The shift from "if" to "how"

After exploring the six examples, the initial question "Do economic instruments work better than command-and-control measures?" calls for refinement. Considering the broad consensus that the relationship between economic and command-and-control instruments is one of mutual supportiveness (even if tensions subsist), the question appears under-complex.[83] It is widely understood that public law itself tends to overestimate the possibility to steer firm behavior, and under-evaluates the complexity of economic rationalities. Visa versa, private law overemphasizes financial value implications, under-estimates the private disposition for public environmental concerns, and the regulatory behavioral instrumentalisation of private institutions. Both sets need to function complementarily if a policy shall succeed.

These insights shift the question to the right design of the policy mix. Does an instrumental sectorial mix sufficiently deal with rationality conflicts involved? Under which conditions

80 *Godt* (supra note 62).

81 Translation by the author CG.

82 Paragraph introduced by the Third Reform Law of 20.12.2012 (BGBl. I p. 2730) changes published. 28.12.2012.

83 *Wustlich*, ZUR 2009, „Ökonomisierung kann Ausdruck eines machtvollen Staates sein", p. 519.

are economic instruments effective, under which not? Do they install counteractive measures to mitigate rationality conflicts so that behavioral incentives are not annulled?[84] The discussion about the proper design has only started (e.g. with regard to emission leakage in carbon policies[85]). How, then, do we measure success of environmental policy instruments? As much as it was a naturalistic short-cut to assume that standards and norms as such could assure environmental quality, a similar "economic short-cut" is to be detected when policy makers praise "economic instruments" as market-based regulation. The brief scrutiny of six examples gave evidence that economic instruments are equally prone to political influence as command and control. Both need political accountability and goal orientation. Only then, the specific complementary functions of private environmental instruments can unfold.

It is submitted that the "merits of economic instruments" can sensitively only be detected and evaluated for each policy field separately. However, some generalization is necessary. The essential yardstick is environmental effectiveness which has three dimensions. The first and the driving force for the installation of economic instruments is the argument of superior international performance (a). The second is environmental quality. Yet, quality is a normative value. Neither is it a measurable, determinable natural science status, nor is the goal only achievable by one policy only. Usually several options may achieve a similar result.[86] Therefore, environmental "effectiveness" is a value decision implying scientific expertise, personal preferences and economic efficiency. Only if the instrument is more effective (alleviating *inter alia* the regulatory capture and the "enforcement deficit") *and* more efficient (better cost ratio between result and effect; better market fit), may the additional transaction costs of private law instruments (negotiation costs; setting up an additional regulatory framework) outweigh the disadvantages of pure public law instruments. The additional quantum of individual freedom (as opposed to authoritarian command-and-control) shall be acknowledged in the equation (b). The third additional yard-stick is democratic legitimacy which translates in transparency and public accountability (as opposed to partisanship, secretiveness). It includes participation in rule-making *ex ante* (assuming that public participation supports a complex weighing process, that more actors secure more rationality, and that subsystem communication is improved by intermediaries), and public scrutiny *ex post* (c).

84 This debate is distinct from the older debate of (unconstitutional) double intrusions of liberties (literature discussed by *Wustlich*, ZUR 2009, keyword "erdrosselnde Abgaben", p. 519).

85 Especially for climate change policies, see *Böhringer/Fischer/Rosendahl*, Cost-effective Climate Change Design: Size Matters, Oldenburg Discussion Papers in economics, July 2011 (http://www.uni-oldenburg.de/fileadmin/user_upload/wire/fachgebiete/wipol/bilder/Diskussions-papiere/DP_V-339_11.pdf).

86 See *Dilling/Markus* (in this volume); seminal *Winter*, "Brauchen wir das? Von der Risikominimierung zur Bedarfsprüfung, KJ 1992, p. 389 (389-404).

II. Measuring Environmental Performance

1. International Performance

The contemporary driving force to employ economic instruments is the international dimension. Case 1 (emission allowances) and Case 2 (ABS) deal with mechanisms which are designed to secure global public goods (climate, biodiversity).[87] Case 1 is an example of an "international" (the duty of each contract party is the same in nature but quantitatively different); case 2 is an example of a *transnational* mechanism (each contracting party has different duties which constitute a single mechanism and which only function in conjunction). Both instruments function "internationally", and are apt to protect a global environmental good. In contrast to territorially limited "public" instruments, "property rights" are submitted to the conflicts of laws paradigm in private law that property is in principle acknowledged in any country to which it is transferred to. In addition, since economic activities (production and sale) have become increasingly global, universal instruments are in the interest of company leaders which tend to implement the more advanced pollution policies for various reasons[88] (exceptions prove the rule). In conclusion, economic instruments truly function internationally.

2. Effectiveness, Efficiency, Freedom

The second yard stick responds to the proposition that "economic instruments" are more effective, more efficient, and better secure individual freedoms (private autonomy as opposed to arbitrary, authoritarian state measures) ("Obrigkeitsstaat": Trute). The point of departure, however, is that freedom is understood as additional choice, not as a carte blanche for environmental deterioration. This said, the answer is differentiated, and aspires to three different aspects.

First, with regard to environmental effectiveness, case 4 [reversal of fixed feed in-prize for renewable energy] and case 6 [liability for failure to connect off-shore wind mills to the grid] gave evidence that economic instruments appear functional where they steer investment decisions (even as a disguised tax). However, if the consequences are not publically accepted (e.g. rising prizes), the instrument is prone to fail. Second, economic in-

87 Even more so, though not discussed here, are the so called "flexible instruments" of the UN-Framework Convention of Climate Change (adjacent to regional/resp. EU trading: Joint Implementation and the Clean Development Mechanism) - which are prime examples for a transnational operation of the instrument (but which also meet resistance due to various cases of misuse).

88 Gerd Winter pioneered in rebutting the then fashionable assumption of „pollution heavens", see contributions to *Winter*, Multilevel Governance of Global Environmental Change. Perspectives from Science, Sociology and the Law, Cambridge: Cambridge University Press, 2006. An alternative (or complementary tools) to the instruments presented here are environmental management tools which stretch across the whole organization, like certification and compliance mechanisms which control the supply chain, and manage the local production processes. This contribution, however, does not cover these tools.

struments which aim to restrict economic activity are not *more* effective ("superior") than command-and-control means: They are equally susceptible to regulatory capture (emission trading for climate protection, case 1). And since they curb individual freedom they are prone to resistance (disobedience, evasion) (biodiversity permits, case 2). If economic instruments are to succeed, uncompromised political will is needed (as much as with command and control). Third, the effectiveness is compromised in cases where rationalities collide (ecologic versus economic). An evident example is carbon emissions trading. Environmental efficiency is not to be expected as long as the market is not established for reasons of industrial (economic) policy. This failure has little to do with the nature of economic instruments. Once the goal is to reduce economic activity, a given measure meets resistance. The lesson to learn is: As soon as economic instruments curb economic activity, they meet the same resistance as command-and-control means. In these cases, they are not *a priori* superior.

Beyond the collision of environmental and economic goals, collision of rationalities on the micro level and the macro level are to be reconciled. Gerd Winter explored this type of conflict enshrined in commodification, and explained it with regard to unused emission allowances. He juxtaposed emission thresholds and trading: He argued that regulatory standards are set as maximal emission limits. Beyond the threshold, an operator would be fined or punished. Therefore, an incentive is set to remain below the threshold. In contrast, the incentive structure in emission trading is different. On the macro level, the environmental concept rests on prices. Since a company can cash in unused allowances, an incentive is set to reduce emissions, and sell unused allowances. But on the micro-level, the buyer has a strong incentive to use the emission allowances which she acquired for good money. If one cannot use the rights in one's own factory, an incentive is set to make others use them. While G. Winter himself would agree that also regulatory standards give an incentive to exploit them to the limit,[89] the problem with valuable (non-used) allowances is real (discussed as "carbon leakage" in economic literature). Various regulatory responses are discussed to mitigate this effect: Emission allowances have to mirror the economic need (scarcity), and the regulatory will to reduce emissions. G. Winter argues that the state has not only to reduce the number of certificates on the market, but also requires the state to purchase non-used rights and to pool them into a fund.[90] The lesson to be learnt here is that economic instruments might set different incentives on the macro and the micro level, which might not be consistent – a novel challenge to legal science. The problem is not new, and is widely discussed by economists. E.g. C. Böhringer proposes external carbon tariffs.[91] Another popular example is water: Commodification was suc-

89 Genehmigungen als Erlaubnisse, dazu *Winter*, DVBl. 1988, p. 659 – 666.

90 *Winter*, JEL 2009, p. 25.

91 *Böhringer*, Energy Economics 2012, p. 97 (97-110).

cessfully opposed for moral reasons implying reduced access, and decreased environmental quality.[92]

Whereas coordination problems might be reduced, economic design problems appear at the forefront. The use of economic instruments intrinsically enshrines economic accounting problems: The "market" of the (scarce) amount of allowances has to be set correctly for market dynamics to work [the cap, the bubble size]. Once policies resort on tinkering the prize (of the construed market), the prize has to be set "right" [fixed feed-in prize, market premium[93]]. The lesson to be learnt is: When employing economic instruments, environmental policy might substitute the naturalistic circuit of a determinable environmental quality [a determination delegated to natural scientists] by an economic circuit [misguided by the idea of a "pareto-optimal" price].

Even if economic instruments do not necessarily enhance economic freedom, they might leave room for more economic choices. However, economic instruments might also reduce liberal freedoms in two constellations: commodification of prior public goods, and the instrumentalisation of private action. Examples are CO_2-emissions. Liberty is reduced once a (formerly open) public resource is commodified. Private liberties are "instrumentalised" once private action is steered in a way that the public goal is achieved (e.g. § 16 UmweltHG). In cases where economic instruments are similarly restrictive as command-and-control, they face equal resistance. Since their design resorts to economics, their regulatory frame is particularly susceptible to lobbying. These instruments are at risk to fail as policy instruments unless strong political will secure their functionality, as the cases 1 and 2 have shown. In both cases, regulatory capture puts effectiveness at risk for reasons of either industrial policy or lobbying. The case of genetic resources teaches: Also contracts can be perceived as coercion, and as an equivalent to a permit system. This is why the commodification of genetic resources became strongly opposed by Western industry, and policy makers responded by re-defining "utilization". This is an example where an economic instrument is captured by interest groups undermining the ecologic policy goal, and which shows that economic instruments and regulatory instruments cannot be put in opposition. Often regulators play industry's rules.

3. Democratic Legitimacy

The third measure refers to democratic legitimacy. Confronted with regulatory capture, and authoritarian regulatory state behavior, economic instruments promised a more open policy set up, with enshrined values of transparency, public influence on decision making,

92 Open letter of several NGOs to the EU-Commission of 15 May 2012, <http://corporateeurope.org/open-letter-eu-commission-water-privatisation>.

93 Criticism with regard to the „EEG-Marktprämie" is voiced by *Gawel/Purkus*, ZUR 2012, p. 587 (587-596), who call for a better systematic integration of incentives.

safeguards against colliding interests, and a complex decision making procedure which allows a fine-tuning of policies, public participation and scrutiny.

As to be expected, the evaluation is mixed and differential. It seems that economic instruments can enhance transparency. Renewable energy policies have improved prize transparency (case 3 and 6). Rising prizes were democratically debated, reduced, and accepted. In contrast, participation is not always improved. While participation in the sense of public scrutiny due to more transparency was enhanced, participation in the sense of additional players, namely NGOs, has only materialized in Germany by contract conservation (not in liability). The feed-in prize, however, accounted for the emergence of a medium size industry as opposed to traditional, large scale, and central energy facilities. All in all, participation in the decision making process was kept to a minimum.[94] Even in nature conservation contracts, the agencies retain the "right to say" in conceiving contracts as "administrative cooperation". "Rights" of citizens look different.

In the context of environmental liability (case 5), the potential of a civil law framing, e.g. in environmental liability, was not exploited by the EU directive. Instead, environmental liability becomes a public instrument, putting agencies (which authorized a specific behavior in the first place) in the driver seat - instead of giving NGOs actual rights of control. The same happened with information rights, NGO participation in proceedings, and the right to sue (transposition of the Århus Convention[95]). All this is by far too restrictive. After years of implementing Århus-Rights (Freedom of information) and NGO-scrutiny ("Verbandsklage") with regard to administrative acts, it is time to reflect about public scrutiny, beyond parliamentary involvement, when policies shift to economic instruments.

The central question is how "networked" governance structures can be made politically accountable. Also modern "hybrid regulatory networks" of public agencies and private companies require legitimacy. Who could supply this scrutiny, which additional actors, in what kind of procedures? NGOs will play a growing role, also private individuals. For both, new forms of collective action have to be devised. Rights which legitimately burden corporate property should be installed. Organizational structures which enable citizens to organize themselves in ecologically friendly ways can be incentivized by regulation (car-sharing, ecological housing project, forest and heating cooperatives, city gardens etc.). In this regard, Ostrom's insights remain important: The former juxtaposition of private against public appears superficial. Environmental concerns are at the same time private *and* public (as examined in case 4).

94 Restrictive wording of § 63 BNatSchG, see *Schlacke*, § 63, in: Schlacke, Gemeinschaftskommentar zum Bundesnaturschutzgesetz, 2012.

95 *Schlacke*, Überindividueller Rechtsschutz, 2008; *Schlacke*, ZUR 2012, p. 393 (393-394).

E. Conclusion

While becoming accustomed to economic instruments in environmental policies, the central question shifted from "if" to "how". The more the miracle formula of the "instrumental mix" loses its fascination, the more do frictions on the interface of various instruments come into sight. However, our knowledge about contradictory incentives on the one hand and counteractive regulatory means is still limited. Considering the high potential of economic instruments with regard to international effectiveness, there is little doubt that environmental policies in "times of globalization" depend on economic instruments. A return to command-and-control instruments is not very probable. However, a critical reflection is needed to secure potential fruits of a modern institutional design. A better understanding of behavioral economics in the legal set up of market-based instruments is advised, and a turn in perspective of environmental lawyers. The article reveals the need for private and public lawyers to cooperate, and an enhanced interdisciplinary discourse. The central message of the article is that economic instruments do not function "better" than regulatory instruments. They face pretty much the same regulatory problems as command-and-control measures. They are not instruments *"ex rerum natura ius"* in the sense that the dynamics of success are unfold just by market forces. The six examples analyzed give evidence of the highly complex regulatory implications. Economic instruments raise the complexity for lawyers since economic rationalities become part of the design. All in all, this consequence is to be expected and welcome - albeit it does not make environmental protection easier. Strong political will is required. Also in this regard, economic instruments do not differ from command-and-control.

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