The Societal Effects of Environmental Disasters in International Environmental Regulation

I. Introduction

The present study deals with the main characteristics and objectives of the post-disaster regulation in international – and regional, as well – context. It especially focuses on the paradigm-shifts of policies, principles and rules (adopted by the states in numerous rules), which are relevant in handling the environmental, political, societal and financial outcomes of the environmental disasters having transboundary effect. The study aims to outline and emphasize, whether these follow-up measures and solutions can be applied in preventive ways in order to avoid the future and analogous disasters. The well-known environmental disasters (e.g. from Seveso to Fukushima, mainly Chernobyl) and their crisis-management technics provide essential examples and solution mechanism to the whole international community and countries, which are facing with the same challenges and threats according to their characteristics and their exposures to similar environmental threats (whether they are man-made or not). This study categorizes the relevant bunch of legislation methods and objectives based upon the post-disaster regulation technics introduced by the states via multilateral ways.[1]

Keywords: post-disaster regulation, resilience, prevention, *ex ante, post facto* measures

II. Societal findings

Throughout the history of the mankind, the alteration and change in climate, biodiversity had also social and societal impacts on the population of the Earth.[2] Beyond these effects, several societal (namely political-based) hindrances intermitted the common thinking and efficient regulation on environmental "hot issues". In Central and Eastern Europe, prior to 1989, the lack of democracy, transparency, NGOs and other organised interest groups, as well as the absence of requirements for preliminary environmental impact assessment had also been descriptive symptoms of the situation at the time. It is worth mentioning that the foundations of the present Aarhus-based system (so-called environmental or green democracy) were still absent from international relations. This was made worse by centrally-planned economy and industry and the existence of almost exclusively state-owned, megalithic plants ("industrial mammoths"), which were responsible for the greatest and heaviest pollution, while they were at the same time unactionable and badly as well as inefficiently managed by the state.[3]

[1] Therefore, the study does not explicitly analyse the methods of the single states in post-disaster situations due to the same fact that the multilevel and diversified state practices can emerge an unical and unified international instrument (by means of international negotiations and regulation) within the form of binding international treaties or non-binding other documents.

[2] However, the level of interconnectedness and interdependency between the members of the society and the objectified environment was continuous till the industrial revolution in the 19th century. The activity of mankind had caused more and more (the increase was exponential) contamination and risks on the human and natural environment, as well.

[3] According to Hill's apt remark, "the lack of private property rights meant the legal system was ineffective in terms of stopping pollution. One of the features of private property is the ability to stop other people from taking actions that damage your property […] under socialism the lack of private rights meant individuals could not use

Furthermore, the scientific certainty regarding the impact of industry on the environment was also significantly lower and less proven as a consequence of under-developed scientific monitoring, poor assessment results and inferior scientific infrastructure. The shift towards democracy produced a need for environmental data and public participation in environmental matters, creating an ideal (and at that time, promising which desire has since fallen) political and legal backdrop for further progress. Yet, several questions were raised and left unanswered by the new democracies in the ensuing two decades. Adding to that, nowadays from the early 1990s, there is another *caesura* which can be observed, the difference between technology-based and market-based approach.[4] But those categories can be interlinked and both of them shall be interpreted in the same system, in the same political and ecological paradigm (none of them was a real part of the pre-1989 period).[5]

The fractions of the main ages of the mankind meant and triggered new paradigms and philosophy relating to the co-existence, symbiosis of mankind and nature; thus, the evergreen (but, and it has to be admitted, periodically and intentionally new-born) concept on the rights of mankind for the exploitation of the surroundings. There is no need for going into further details to conclude that it was the key issue for the survival of human beings. The notion dealing with such issues is called *social resilience*, which had been come into the forefront in the very last decades, mutually considering and harmonizing the social changes, human need and balancing the economy-ecology contrast within the context of the existing environmental changes (whether they are man-made or the source is not proven).[6] Within the core context of social resilience, the vulnerability of human settlements has also undergone an in-depth scrutiny via the interdisciplinary methods of disaster-resilience connection in the relevant literature.[7]

In sum, the change in the ecosystem is continuous; however the real paradigm-shifts in societal demands toward environmental legislation (in municipal laws) or regulation (in international level, as well)[8] took place traditionally right after the disastrous effects of certain accidents to which this study is referring to in detail.

III. Societal Effects of Environmental Disasters relating to the Regulation

The direct consequences of environmental disasters within the regulation technics are worth emphasizing and paying attention to their in-depth scrutiny. The *ex ante* (prior to the disasters, stipulated for prevention, precaution and to avoid disasters) and *post facto* (responsive

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the system to prevent harm to property." Compare, P. Hill,'Environmental Problems after Socialism' [1992] 12 Cato Journal, No.2, 328

[4] Compare, D. Dudek – R. Stewart – J. Wiener,'Environmental Policy for Eastern Europe: Technology-Based Versus Market-Based Approaches' [1992] 17 Columbia Journal of Environmental Law, No. 1, 1-52

[5] On the specific CEE-issues within the context of space and geography, see, I. Hamilton,'Transformation and Space in Central and Eastern Europe' [1999] 165 The Geographical Journal, No. 2, 135-144

[6] For this theory and societal paradigm-shift, see, N. W. Adger,'Social and Ecological Resilience: Are They Related?' [2000] 24 Progress in Human Geography, No.3, 347-364 and F. Berkes – J. Colding – C. Folke (eds.),'Navigating Social-Ecological Systems. Building Resilience for Complexity and Change' (Cambridge: Cambridge University Press 2003) 1-416

[7] See further, M. Pelling,'The Vulnerability of Cities: Natural Disasters and Social Resilience' (London: Routledge 2003) 1-224

[8] On the controversial role of positive rules of international instruments regarding specific environmental topics, see, P. Williams,'Can International Legal Principles Play a Positive Role in Resolving Central and East European Transboundary Environmental Disputes?' [1994-1995] 7 Georgetown International Environmental Law Review 421-462

regulation, stipulated to disaster-specific issues as a prompt reaction to disasters) l*egislation of municipal law and regulation in international law* are not paradoxical and exclusive solutions on the sides of the law- and policymakers. It is clear and certain as well as reasonable demand that i) firstly, states have a duty to prevent disasters and environmental damage, degradation injury, so thus, to enact *ex ante* anticipatory measures; ii) secondly, they are also intended to establish *post facto* duties and financial obligation to mitigate any resulting damage and the extent of the harm through posterior measures. The ideal and linear way of regulation is twofold in this sense, *ex ante* and *post facto* methods (however, the emphases and aims, therefore the measures are different) are essential in each crucial field entailing (or exposed to) potential disasters.

In this respect, the role of regulation (in municipal law, legislation, as well) has come into the forefront of codification of environmental law, that should focus – according to *Veinla*'s thought on state legislation – on the following main issues, which can subsequently be transformed into the role of codification of states on disasters:
a) Why is the codification of environmental law necessary and what are its benefits?
b) What goal to set for the codification of environmental law?
c) What should the scope of the environmental code (or treaty – the author) *be?*
d) What are the dangers of codification of environmental law? Answers to these questions form the conceptual basis for the environmental code (treaty – the author) *and enable to develop a methodology for preparation of the draft code* (draft treaty – the author) *and identify the structural and essential cornerstones (main principles) of the future code* (treaty – the author).[9]

From the abovementioned categories, those questions raised by Veinla (thus, the main aims of environmental regulation) can be interpreted in *ex ante* and *post facto* regulation methods, as well.

1.
Ex ante regulations are typically i) impact assessment-based or ii) right-based, highlighting societal demands and claims by the states and the population, as well.

i. The classical *impact assessment-based ex ante regulation* aim is attached to the 1991 Espoo Convention on Environmental Impact Assessment in a Transboundary Context, which prescribe the model-like precautionary and preventive measures of environmental impact assessment of some activities (being relevant on environmental basis) at the very early stage of the potential dangerous (or environment-sensitive) activity to be introduced. Furthermore, such model-like measures include (articles 2-7 of the convention) the notification and consultation requirements, confirmation and participation by the affected countries, transmittal of information from the affected country to the country of origin, preparation of environmental impact assessment documentation, post-project analysis, which are all obligatory upon to the text of the convention.

ii. Beyond the impact-based 1991 Espoo Convention, the other, thus the *right-based ex ante regulation aim* is significant within the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. The 1998 Aarhus Convention (called the 'green democracy

[9] Compare, H. Veinla,'Codification of Environmental Law. Major Challenges and Options' [2000] 5 Juridica International 59

convention' with the three main pillars figured out in the title of the convention) provides opportunities to the general public and the potential affected parties to take part in decisions, processes and access to justice which can be considered minimum and efficient safeguards for prevention and precaution on the side of the potential damaged party. These rights ensure the necessary steps shall be taken in order to avoid the disaster in the affected parties.[10]

In sum, such impact assessment and right-based approaches shall be rated to the *ex ante side* of the regulation concerning disasters, including preventive, precautionary measures and disaster-risk-reduction as well as command-and-control regulation on the basis of the classification of legal-illegal dichotomy of means and measures aiming to avoid the environmental disasters or their injurious effects.

2.

Post facto regulations are linked to the occurred disasters and almost exclusively implement *follow-up measures* designed and framed to the concrete disaster. Therefore, the categorization of such exemplars is almost impossible; however, some common conclusions can be drawn. Such disasters raise concerns among the public and endanger the credibility, potency and competency of the law- and policymakers; thus the societal need is clear in managing the situation by means of disaster-damage-reduction, damage mitigation, disaster-responsive enforcement measures, assistance, supervisory technics, compensation of the affected parties and monitoring. Due to the fact that each disaster demands separate follow-up measures, such classification as this study outlines above under the aegis of the *ex ante* regulation cannot be drawn.

However, the model-like post-Chernobyl regulations includes the adoption of the 1986 Convention on Early Notification of a Nuclear Accident and the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (models of post facto regulations, however the main aim was to mitigate the damages). These regulation steps confirmed the reality and feasibility of the prompt and efficient follow-up measures (in the midst or before the end of the Cold War era) within the field of international law and state-to-state relations. The lack of notification was a crucial point in the handling of the Chernobyl disaster[11] by the Soviet authorities – by keeping the event secret for several days, the emission of dangerous materials via air to the atmosphere of a number of European countries went unchecked.

[10] An apt remark and quotation from Veinla proves the paradigm-shift character of the Aarhus Convention. The quotation is the following: „the importance of the Aarhus Convention is certainly not limited to the area of environmental protection – the Convention has a much broader function. The goal is to contribute to the implementation of open society principles and to ensure possibilities to control the activities of the state, local governments, and persons in private law who perform public functions. Exercising the rights defined in the Convention increases the responsibility of competent agencies and other person in decision-making, while the decisions made this way are clearer and better understandable as appropriate for open society." See, Veinla: op. cit. 62

[11] The exact account of impact consist of the immediate death of more than thirty people "and, as a result of the high radiation levels within a twenty-mile radius, 135 000 people had to be evacuated for an indefinite period. Clouds contaminated by radiation moved from Chernobyl to Sweden where increased radiation was first noticed by measuring equipment in Western Europe. Easterly winds transported radiation to Central Europe, causing damage to vegetables and fruit as far away as Austria and Switzerland." See, M. Hinteregger,'Environmental Liability and Ecological Damage in European Law' (Cambridge: Cambridge University Press 2008) 45

The 1986 Early Notification Convention set up a specific notification system (post facto) on incidents having transboundary nature and radiological character or significance. According to Article 2, the state of origin shall notify, directly or through the International Atomic Energy Agency those States which are or may be physically affected about the nuclear accident, its nature, the time of its occurrence and its exact location where appropriate. Accordingly, the *post facto* main features of the notification requirement are clearly and aptly seen.

The other post-Chernobyl treaty, the 1986 Assistance Convention established a system, therein the states shall cooperate between themselves and with the International Atomic Energy Agency in accordance with the provisions of the Assistance Convention to facilitate prompt assistance in the event of a nuclear accident or radiological emergency to minimize its consequences and to protect life, property and the environment from the effects of radioactive releases (Article 1).

Notwithstanding, Chernobyl disaster (after nuclear incident in Three Mile Island in 1979 and just prior to 1987 Goiânia catastrophe) has unprecedented societal effects regarding the legislation-regulation (see the conventions above), approval for and support (whether it is governmental or public) of nuclear energy, movements against the nuclear power plants, and the disaster threw new light upon the nuclear issue worldwide. The real connection between environmental disasters and societal impacts (paradigm-shifts) is principally proven by nuclear incidents (Chernobyl and mainly, Fukushima from the previous past).

Thus, the regulation methods at the international level within the field of *post facto* regimes are the following:

i. early notification on the effects (if it has transboundary impacts; however, nowadays, almost each environmental disaster has transboundary effect);
ii. assistance after the disaster (state-to-state aspect);
iii. disaster responsive prompt provisions (military-based, law enforcement and/or legislative)[12];
iv. monitoring;
v. indemnification methods (polluter-pays-principle, third party liability, etc.);
vi. reconstruction
or – and the study lays down that this one is the best option –
vii. a *mixed method of regulation*, encompassing the previous i)-vi) regulative objectives.

IV. Conclusion

The societal effects of environmental disasters are the subject of numerous research fields: sociology, jurisprudence-legal and political studies, ecology, economy, management studies and history, as well. This study reflected some specific aspects of the legal studies, thoroughly taking over the position of post-disaster-oriented regulation methods entailing either *ex ante* or *post facto* measures and regulation objectives. Managing a disaster (whether it has rather legislative or law enforcement or other elements) is always a crucial problem to be solved of

[12] About a certain societal consequence of the Hurricane Katrina through the lenses of law enforcement and military aspects (looting and violence), see, L. G. Sun,'Disaster Mythology and the Law' [2010] 96 Cornell Law Review 1131-1208

law enforcement and policymaker bodies before the eyes of the public and the international community.[13]

The typical methods are emphasized within the study by means of categorization of archetypal *ex ante methods* [i) preventive, ii) precautionary measures, iii) disaster-risk-reduction and iv) command-and-control regulation]; while the *post facto methods* are classified into five groups [i) early notification, ii) assistance, iii) disaster responsive prompt enforcement technic, iv) monitoring, v) indemnification and vi) reconstruction], which six methods create the seventh, the vii) best mixed one considered to be the best option, the best-case-scenario of post-disaster regulations.

In sum, the lawmaker bodies (in this respect, the states) shall pay deep attention to the societal concerns of the wide public regarding the environmentally dangerous activities, plants; thus, the hazards of environmental disasters shall be an integrated part of environmental governance.[14] Due to this necessary preparedness, the law- and policymakers need *ex ante* measures (in advance, to avoid the disasters) and *post facto* measures or post facto plans and concepts (how to manage and mitigate the consequences and to appease the public) simultaneously.

V. Bibliography

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[13] Therefore, as Raustiala stated, „the participation of NGOs enhances the ability, in both technocratic and political terms, of states to regulate through the treaty process. As states in concert have expanded and coordinated their regulatory powers in recent decades they have incorporated NGOs; the terms of NGO participation reflect the resources and skills of NGOs as well as the political and technocratic incentives of states." See, K. Raustiala,'States, NGOs, and International Environmental Institutions' [1997] 41 International Studies Quarterly 736

[14] Which has mainly four broad, and often overlapping, dimensions: integration, monitoring/evaluation, participation, and instruments for environmental protection. See in details, J. Scott,'Law and Environmental Governance in the EU' [2002] 51 International and Comparative Law Quarterly, No.4, 996- 1005

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