

No 1/2018

ENVIRONMENTAL  
LAW NETWORK  
INTERNATIONAL

RÉSEAU  
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## REVIEW

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The genome editing technique is covered by Directive 2001/18 - Comment on Advocate Bobek's Opinion in case C-528/16

*Ludwig Krämer*

The ECJ Rules Environmental NGOs Must Have Access to Justice in Water Law Procedures

*Summer Kern and Gregor Schamschula*

The role of legislation and courts in the protection of the environment in the European Union and its impact on the European integration of Albania

*Erjon Muharremaj*

Simulation games in the Regulatory Impact Assessment – Simulation of the implementation of the EIA Amending Directive 2014/52/EU

*Martin Führ, Jaqui Dopfer, Kilian Bizer et al.*

Recent Developments

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## Editorial

The current issue of *elni Review* contains several contributions focussing on different aspects in the field of European environmental law practice.

In his profound article “The genome editing technique is covered by Directive 2001/18 – Comment on Advocate Bobek’s Opinion in case C-528/16” *Ludwig Krämer* argues that genome editing must be understood as being covered by the provisions of Directive 2001/18 on the deliberate release of genetically modified organisms into the environment.

“The ECJ Rules Environmental NGOs Must Have Access to Justice in Water Law Procedures” by *Summer Kern* and *Gregor Schamschula* assesses the current developments of implementation with regard to access to justice in Austrian Water Law. The ruling in question can certainly be seen as a milestone in environmental case law.

The article by *Erjon Muharremaj* “The role of legislation and courts in the protection of the environment in the European Union and its impact on the European integration of Albania” delivers interesting insights with regard to

the current state of environmental law in Albania and its shortcomings with regard to jurisdiction. This certainly will have an impact on the acquisition negotiations with the European Union.

Finally, *Martin Führ, Jaqui Dopfer, Kilian Bizer et. al.* discuss simulation games as a method for regulatory impact assessments. They set out their experiences with the method acquired during the impact assessment of the EIA Amending Directive 2014/52/EU.

The current issue of the *elni Review* delivers information about recent developments; a summarized version of the “Peoples’ Climate Case”-application delivered by the applicants and a review of the book “Environmental Crime in Europe” by the editors Andrew Farmer, Michael Faure and Grazia Maria Vagliasindi.

We hope you enjoy this issue.

*Nicola Below/Martin Führ*

July 2018

## The genome editing technique is covered by Directive 2001/18 Comment on Advocate Bobek's Opinion in case C-528/16

Ludwig Krämer

### 1 Introduction

*The question, whether or not plants that were obtained by genome editing are covered by Directive 2001/18<sup>1</sup> is at present the subject of proceedings before the Court of Justice of the European Union (CJEU)<sup>2</sup>. In this case, Advocate General (AG) Bobek has just issued his Opinion.<sup>3</sup> He concluded that such plants are exempted from the provisions of the Directive, as genome editing is a form of mutagenesis, so that the exemption of Art. 3(1) of the Directive, read in conjunction with its Annex I B, applied. The application of the precautionary principle does not lead, in his opinion, to a different result.*

*The Opinion of the AG is not binding for the CJEU. However, it has a considerable weight, as it is the first factual and legal analysis of the case made by someone else than one of the Parties, and as the AG is an eminent lawyer with a rich professional experience and who is in rank equal to a judge at the CJEU.*

*In the following, it will be argued that the Opinion of the AG comes to conclusions which are contrary to the wording and the purpose of Directive 2001/18, and that genome editing must be understood as being covered by the provisions of that Directive.*

### 2 Genome editing in Directive 2001/18

Directive 2001/18 is process-oriented: it does not consider the genetically modified organism as such, but looks at the process by which the organism has been altered.<sup>4</sup> One of the ways in which an organism may be altered is mutagenesis, which leads to the mutation of an organism. Mutagenesis involves an alteration of the genome of a living species.<sup>5</sup> When it was attempted to influence the mutation of plants by human intervention, techniques of using chemicals and/or radiation were developed (random mutagenesis). They were in use worldwide since the

1920s and did not lead to any concern for human health or the environment.

Since 2001, after the adoption of Directive 2001/18, new forms of intervention in the genome were developed; they were essentially characterized by targeted interventions in the genetic material of an organism. The technique consisted of inserting, deleting, modifying or replacing DNA at a specific point in the genome of a living organism. As the intervention is deliberate and takes place at a specific point of the genome, it is conveniently called genome editing.

The Advocate General classified organisms which underwent random mutagenesis as well as those which were the subject of genome editing as genetically modified organisms.<sup>6</sup> He concentrated on the question, whether the exemption of Art. 3(1) and Annex I B (hereafter the mutagenesis exemption) applied to both the random mutagenesis and the genome editing or – as the applicants in case C-528/16 argued – only to random mutagenesis processes.

Art. 3(1) of Directive 2001/18 reads as follows: “This Directive shall not apply to organisms obtained through the techniques of genetic modification listed in Annex I B”. And Annex I B states: “Techniques/methods of genetic modification yielding organisms to be excluded from the Directive, on the condition that they do not involve the use of recombinant nucleic acid and molecules or genetically modified organisms other than those produced by one or more of the techniques/methods listed below are: (1) mutagenesis...”

Prior to the adoption of Directive 2001/18 in 2001, there were only conventional or random methods of mutagenesis that were applied to plants or animals; they used chemicals or radiation in order to reach a mutation. Genome editing as a method was unknown, or in any case not used in breeding techniques in the EU or worldwide. These techniques only started to be used later.

Therefore, the question is, whether the mutagenesis exemption of Art. 3 and Annex I B applies to random mutagenesis as well as genome editing, or whether the exemption of mutagenesis only covers the forms of mutagenesis which were known and in use at the moment of adoption of Directive 2001/18.

<sup>1</sup> Directive 2001/18 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220, OJ2001, I106 p.1.

<sup>2</sup> CJEU, case C-528/16 Confédération paysanne a.o. v Premier Ministre, Ministre de l'agriculture, de l'agroalimentaire et de la forêt.

<sup>3</sup> Advocate General Bobek, Opinion in case C-528/16, ECLI:EU:C:2018:20.

<sup>4</sup> see Directive 2001/18 on the deliberate release into the environment of genetically modified organisms, OJ 2001, L 106 p.1, Article 2 no. 2: “genetically modified organism (GMO) means an organism with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombinant” (emphasis added).

<sup>5</sup> Advocate General (fn. 3, above), paragraph 44.

<sup>6</sup> *Ibidem*, paragraphs 60 to 64.

### 3 Genome editing as « mutagenesis » under Directive 2001/18?

The Advocate General was of the opinion that genome editing is a form of mutagenesis. He did not explain this understanding of the term “mutagenesis”. Doubts exist in this regard, as in 2001 the technique of genome editing was unknown. In contrast, the exemption for mutagenesis had already existed in Directive 90/220<sup>7</sup>, the directive preceding Directive 2001/18. It had worked between 1990 and 2001 without causing any problem in differentiating between genetically modified organisms (plants) and plants where mutations were obtained through treatment with chemicals or radiation. It is difficult to imagine that the EU, when it adopted Directive 2001/18 had anything else in mind than the random mutagenesis methods which existed at that time. In other words, the term “mutagenesis” in Directive 2001/18 was meant to exempt the random mutagenesis methods.

This understanding finds support in Recital 17 of Directive 2001/18, which reads: “This Directive should not apply to organisms obtained through certain techniques of genetic modifications which have conventionally been used in a number of applications and have a long safety record”. Also, this Recital existed already since 1990, as Recital 7 of Directive 90/220.

The only technique which had been used in a number of applications and had a long safety record – in 1990 as well as in 2001 – was the mutagenesis with the help of chemicals or radiation. Thus, if Recital 17 is meant to have any useful effect, it must serve as an interpretation of the exemption of Art. 3 and Annex I B.

The Advocate General was of a different opinion. He considered the term “mutagenesis” – which is not defined in Directive 2001/18 – as a general term which also included genome editing. He came to this result by arguing that the use of a specific word “mutagenesis” not only included those techniques, which came under this term at the time of its insertion into a legislative act but also all other techniques which were unknown at that time, but which were developed at a later stage. Only such a dynamic interpretation of the term “mutagenesis” was in his opinion compatible with the intention of Directive 2001/18.<sup>8</sup>

### 4 Arguments from a historical perspective

There are several arguments, which plead against this understanding. First, the AG has no explanation

for the existence of Recital 17. He does not clarify which techniques would be covered by this Recital. He refers to declarations by the Commission and the Council during the hearing of case C-528/16, according to which Recital 17 was a mere statement and did not intend to differentiate between mutagenesis techniques.<sup>9</sup> Such declarations though, made at least seventeen years after the insertion of Recital 17 into the Directive, are not very convincing. They leave open the question, which techniques were considered by that Recital. The only reasonable answer is that Recital 17 was inserted in order to further qualify the exemption of mutagenesis, in the sense that only those techniques should be excluded from the scope of application of Directive 2001/18, which had a long safety record and had been used in numerous applications before 2001.

#### 4.1 Interpretation in the light of Directive 90/2001

The AG argued further that the predecessor of Recital 17, Recital 7 of Directive 90/220, was inserted by the Commission in its proposal for a directive, which later became Directive 90/220; at that time, the exemption for mutagenesis techniques of Art. 3/Annex I B did not exist; it was inserted into Directive 90/220 only at a later stage.<sup>10</sup> This is evidence for the AG that Recital 17 (the earlier Recital 7) and the exemption for mutagenesis are not interdependent.

However, this argument is not pertinent: right from the beginning of legislative activities in the end of the 1980s, it was clear for the Commission, the European Parliament and the Council, that the regulation on genetically modified organisms should not interfere with conventional breeding techniques, which had, as it was worded, “a long safety record”. This general understanding of delimiting the GMO techniques to conventional techniques was clear for everybody and in Recital 7 of Directive 90/220. This Recital did not need to be changed, when the exemption of “mutagenesis” was added to the text.

The history of Recital 7 – which later became Recital 17 – and the exemption of mutagenesis thus leads just to the opposite conclusion of that of the AG: the term “mutagenesis” was used in Directive 90/220 as it was understood and practiced at the time of adoption of Directive 90/220. Had a detailed definition of “mutagenesis” been inserted into the text of Directive 90/220, it would have, without doubt, referred to the use of chemicals and radiation, but not to other techniques such as genome editing, for the simple reason that such techniques were unknown.

The delimitation between conventional breeding techniques and alterations of the genetic material of

<sup>7</sup> Directive 90/220 on the deliberate release into the environment of genetically modified organisms (GMOs), OJ 1990, L 117 p. 15.

<sup>8</sup> AG (fn. 3, above), paragraphs 77 and 107.

<sup>9</sup> *Ibidem*, paragraph 95.

<sup>10</sup> *Ibidem*, paragraph 94.

an organism functioned without the slightest problem throughout the 1990s. Therefore, it did not need a change in the wording of the Directive in 2001.

This history also explains why the 2001 insertion, in Annex I B of Directive 2001/18, of the use of recombinant nucleic acid molecules does not prove that the legislature of 2001 intended to narrow down the term “mutagenesis” only by referring to such molecules, but meant, for the rest, to cover all forms of mutagenesis techniques, including those that might be developed in the near or distant future.<sup>11</sup> The mutagenesis techniques which existed in 2001 – and which had existed since 1990 and earlier – were exempted: this was already ensured by the joint provisions of Recital 17 and Art. 3/Annex I B. No further clarification was necessary.

#### 4.2 *The origins of GMO-law on deliberate release*

The understanding of Directive 2001/18 cannot leave aside its origins. In the second half of the 1990s, a crisis broke out as regards the deliberate release of GMOs. In a specific case, concerning BT-maize, the Commission had proposed to approve the deliberate release, but was opposed by the majority of Member States which made it impossible to obtain a qualified majority of Member States supporting the Commission proposal. According to the rules applicable at that time, the Commission then submitted its proposal to the Council. In the Council, thirteen Member States opposed the Commission proposal, one supported it and one abstained. However, as one Member State sided with the Commission, and as the Council needs unanimity in order to deviate from a Commission proposal, no decision was taken by the Council and the file came back to the Commission which then authorized the deliberate release.<sup>12</sup>

This Decision caused an outcry among the EU public and Governments of Member States. The Commission and the whole EC were accused of being too receptive to business interests and neglecting the concerns of the public. It was considered unacceptable that a deliberate release could be approved against the opinion of the large majority of the Member States. Five Member States declared publicly that they would not continue with the procedures of authorizing the release of GMOs, until the safety concerns of the Member States were taken more seriously, procedures were changed and the public trust and confidence were restored.<sup>13</sup> No

Member State sided in public with the Commission. The whole approval process for GMOs came to a standstill (the so-called *de facto* moratorium), which had as the consequence that no approval for the release of GMOs was granted.<sup>14</sup>

Then, the Commission submitted a proposal for amending Directive 90/220.<sup>15</sup> However, the Council was of the opinion that an amendment of Directive 90/220 was not sufficient to restore public confidence in GMO techniques and decided to adopt a completely new text, the Directive 2001/18. It introduced the precautionary principle as one of its key principles, fixed stricter, more protective conditions for the authorization and approval procedure of GMOs, requested an environmental risk assessment for all applications, provided for the systematic participation of the European Food Safety Authority as a scientific body, gave the public the possibility to be consulted during the decision-making process, provided the possibility of the intervention of a Committee on Ethics, and laid down post-marketing controls.

All the provisions which were newly inserted into Directive 2001/18, compared to Directive 90/220, aimed at strengthening the protection of human health and the environment. There was not one provision where the new Directive relaxed the standards and considered that less protection for humans and the environment should be ensured. In order to avoid different approaches to GMO releases among the Member States, which would have threatened the integrity of the EU internal market, a high level of environmental protection was established in the Directive.

In view of this, it cannot be argued, as the AG did, that the mutagenesis exemption of Art. 3/Annex I B meant to leave the gate open and exempt all future scientific evolutions in gene alterations from the field of application of Directive 2001/18. Rather, the legislature of 2001 sought to ensure, as far as possible, that the public in the EU gained a new confidence in the GMO procedure and could be sure that only such GMO products would be released into the environment that had either a long safety record (Recital 17) or were thoroughly tested according to the environmental risk assessment of Directive 2001/18, Annex II.

<sup>11</sup> In this sense AG, *ibidem*, paragraph 77.

<sup>12</sup> Commission Decision 97/98, OJ 1997, L 31 p.69. The full story of this case is reported in European Parliament, Report of the Committee on Environment, Public Health and Consumer Protection of 28 January 1999, Opinion of the Committee on Research, Technological Development and Energy of 29 September 1998, document PE 227.836 /A 4-0024/99.

<sup>13</sup> The statement of the five Member States- Denmark, Greece, France, Italy and Luxembourg - is published in World Trade Organization (WTO), Dis-

pute Settlement on Approval and Marketing of Biotechnological Products, WT/DS 291-293, United States, Canada and Argentina v. European Communities, Dispute Panel Report of 29 September 2006, paragraph 7474. See also paragraph 7484 which reproduced the public statement of seven EU Member States that no authorization for GMOs should be granted, until it was proven that it did not cause safety concerns.

<sup>14</sup> This moratorium lasted from 1998 until 2004 or 2005.

<sup>15</sup> Commission, COM(1998) 85, OJ 1998, C139 p.1.

### 4.3 Precautionary principle in the context of risks of deliberate release of GMOs

This result is also confirmed by the very prominent function, which Directive 2001/18 attributed to the precautionary principle. This principle was referred to several times and very prominently, in Recital 8, in Art. 1, Art. 4 and in the provisions on the environmental risk assessment (Annex II); in particular its mentioning in Art. 1, the introductory article of the Directive, needs to be stressed, as this indicated that the whole drafting and application process should be governed by precautionary considerations. The precautionary principle was given the function to act as a catch-all provision: as soon as there was scientific uncertainty with regard to a GMO, the decision-maker should err on the safe side, in order to protect humans and the environment. Again, this prominent role of the precautionary principle, which is found in no other legislative act of the EU, is explained by the loss of trust of the public in the GMO procedures at European level, the general fear of undesired consequences of a deliberate release of GMOs into the environment and the need to restore this lost confidence.

The AG interpreted the function of the precautionary principle in the context of Directive 2001/18 quite differently. He was of the opinion that the mutagenesis exemption of Art. 3/Annex I B had nothing to do with Recital 17. Consequently, the term “mutagenesis” had to be interpreted, in his opinion, exclusively on the basis of Annex I B. This excluded the application of the precautionary principle in such an interpretation, as this would otherwise lead to an interpretation *contra legem*.<sup>16</sup>

The AG was certainly correct in stating that the precautionary principle cannot lead to an interpretation of a term *contra legem*. However, the AG’s understanding of the term “mutagenesis” was based on the assumption that Recital 17 is irrelevant for the definition of “mutagenesis” in the context of Directive 2001/18. The understanding of this notion here is different: “mutagenesis” in Annex I B is the technique of mutagenesis, which has a long safety record and was conventionally used in a number of applications. This is not the case for the “new directed mutagenesis techniques” mentioned in the first question submitted by the French Conseil d’Etat to the CJEU. For this reason, there is no justification for why the precautionary principle should not apply with regard to the question, whether or not such new techniques come under the field of application of Directive 2001/18.

This is another aspect which the AG neglected in his analysis: Directive 2001/18 had the declared objective to appease the public in the EU, which was

concerned about the fact that GMOs were allowed to be released into the environment, though a great majority of Member States considered that their safety had not been proven. For this reason, the legislature did not only amend Directive 90/220, as proposed by the Commission, but decided to have a completely new directive drafted. In addition, all the supplementary safeguards, mentioned above, had the objective to ensure that human health and environmental safety were not at risk by a release. In view of this, it is completely unlikely that the legislature intended to establish a general derogation for all present and future mutagenesis techniques, knowing that research in biotechnology was ongoing and being aware that with any progress in research such a general exemption would continuously have a wider field of application.

With the adoption of Directive 2001/18, the legislature intended to ensure a full harmonization of the provisions of Member States on the release of GMOs into the environment. For this reason, the Directive was based on Art. 95 EC (the present Art. 114 TFEU) and not on the environmental, consumer protection or another provision of the EC Treaty. And for the same reason, Recital 17 mentioned the “long safety record” as a decisive criterion: it intended to ensure public opinion in Europe that health and environmental safety were the main concern of the new Directive. This corresponds to the fact that Recital 4 warned against risks from GMOs, Recital 5 referred to the protection of human health and the environment, Recital 6 to the principle of preventive action, Recital 7 reaffirmed the need to ensure the “safe” development of GMO products, Recital 8 introduced the precautionary principle as a leading principle stating that it had influenced the drafting of the Directive and would have to be applied in its implementation, and Recital 9 recurred to ethical principles. All these Recitals, which preceded the Recitals that refer to individual provisions of the Directive, underlined the principal objective of the Directive, which was to ensure the maximum amount of safety, when GMOs were released into the environment.

This intention of the legislature was finally repeated in Art. 1, which stated the objectives of harmonizing national laws and ensuring the protection of health and the environment and Art. 4, which laid down the general obligations and started by requesting Member States to take all appropriate measures to avoid adverse effects on human health and the environment. And the precautionary principle obtained the function to serve not only in the drafting of the Directive, but also in its implementation, which necessarily includes the interpretation given to the different terms of the provisions.

<sup>16</sup> AG (fn. 3, above), paragraph 103.

## 5 Negative effects of the interpretation of genome editing as “mutagenesis”

In contrast to this clearly manifested intention of the legislature, the AG was of the opinion that the use of any new mutagenesis technique would enable the producer of GMOs to escape the provisions of Directive 2001/18 and thus progressively, with the evolution of science, reduce its field of application. According to the AG, this progressive reduction of the field of application of Directive 2001/18 goes hand in hand with the increased freedom of EU Member States to regulate newly directed mutagenesis techniques.<sup>17</sup> This opinion would have the consequence that on the one hand, the double objectives of Art. 1 of the Directive – harmonization of national legislation within the EU and a high level of the protection of human health and the environment – would progressively be undermined by the recurrence to new techniques. On the other hand, the public within the EU would be increasingly confronted with GMOs that were no longer released on the basis of Directive 2001/18, but on the basis of the legislation of the – in 2001 15, now 28 – Member States. As such national legislation will necessarily be different as regards approaches, intensity of the regulation, the application of the precautionary principle, the intervention of national scientific bodies, the time of introduction of such legislation etc., the public would be confronted with GMOs that offer different degrees of safety. Inevitably, this would lead to controls at the national borders and other barriers to the free circulation of approved GMO products.

Such a result is diametrically opposed to the intention of the legislature in 2001, which intended to restore public trust and confidence in GMO techniques and the processes of approving a deliberate release into the environment, and of creating and maintaining an internal market for the release of GMO products.

Furthermore, it is by no means unusual that a specific provision, which is used in EU law, obtains a different, often narrower interpretation than originally considered, due to political, economic or scientific evolution. The best-known example concerns the free circulation of goods within the EU. The present Art. 34 TFEU – which has existed in the original EEC Treaty since 1958 – prohibits quantitative restrictions on imports and “all” measures having equivalent effect between Member States. However, in its famous “Cassis de Dijon” judgment, the CJEU decided that national measures, which pursued a

legitimate public interest<sup>18</sup> did not constitute measures of equivalent effect and were therefore not prohibited.<sup>19</sup> Later, due to the evolution of environmental law and policy – the environment had not been mentioned in the EEC Treaty of 1958 at all –, it decided that also the proportionate protection of the environment, which restricted the free circulation of goods, did not constitute a measure of equivalent effect.<sup>20</sup>

It follows from this jurisprudence that a restriction of the term “mutagenesis” to those techniques, which were in use in 2001 and had a long safety record, is perfectly compatible with EU law and its interpretation rules.

The opinion of the AG that Member States are completely free in regulating genome editing and that Directive 2001/18 does not apply to that technique, has other consequences: The absence of EU or of national provisions on genetically modified organisms, where the modification was induced by genome editing, allows GMO producers or importers to bypass the careful and long approval procedure under Directive 2001/18 by using genome editing. This would mean that Directive 2001/18 is obsolete: genetically modified organisms, which were modified with the help of genome editing could, in the absence of EU and national provisions, circulate freely within the EU, without environmental risk assessment, assessment by the European Food Safety Authority and the other safeguards which Directive 2001/18 had provided for.

## 6 Conclusion

Genome editing is not a form of mutagenesis as regulated in Art. 3(1) and Annex I B of Directive 2001/18. The exemption provided for in those provisions only applies to mutagenesis techniques which have conventionally been used in a number of applications and have a long safety record.

<sup>17</sup> *Ibidem*, paragraph 150.

<sup>18</sup> The CJEU mentioned the effectiveness of fiscal supervision, the protection of public health, the fairness of commercial transactions and the defence of consumers.

<sup>19</sup> CJEU, case 120/78, *Rewe v. Zentralverwaltung*, ECLI:EU:C:1979:42.

<sup>20</sup> CJEU, case 302/86, *Commission v. Denmark*, ECLI:EU:C:1988:421.

## Imprint

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The Editors would like to thank **Michelle Monteforte** and **Vanessa Cook** (both Öko-Institut) for proofreading the *elni Review*.

We invite authors to submit manuscripts to the Editors by email.

The *elni Review* is the double-blind peer reviewed journal of the Environmental Law Network International. It is distributed once or twice a year at the following prices: commercial users (consultants, law firms, government administrations): €52; private users, students, libraries: €30. Non-members can order single issues at a fee of €20 incl. packaging. The Environmental Law Network International also welcomes an exchange of articles as a way of payment.

The *elni Review* is published with financial and organisational support from Öko-Institut e.V. and the Universities of Applied Sciences in Darmstadt and Bingen.

*The views expressed in the articles are those of the authors and do not necessarily reflect those of elni*

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The institute's mission is to analyse and evaluate current and future environmental problems, to point out risks, and to develop and implement problem-solving strategies and measures. In doing so, the Öko-Institut follows the guiding principle of sustainable development.

The institute's activities are organized in Divisions - Chemistry, Energy & Climate Protection, Genetic Engineering, Sustainable Products & Material Flows, Nuclear Engineering & Plant Safety, and Environmental Law.

#### The Environmental Law Division of the Öko-Institut:

The Environmental Law Division covers a broad spectrum of environmental law elaborating scientific studies for public and private clients, consulting governments and public authorities, participating in law drafting processes and mediating stakeholder dialogues. Lawyers of the Division work on international, EU and national environmental law, concentrating on waste management, emission control, energy and climate protection, nuclear, aviation and planning law.

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The University of Applied Sciences in Bingen was founded in 1897. It is a practiceorientated academic institution and runs courses in electrical engineering, computer science for engineering, mechanical engineering, business management for engineering, process engineering, biotechnology, agriculture, international agricultural trade and in environmental engineering.

The *Institute for Environmental Studies and Applied Research* (I.E.S.A.R.) was founded in 2003 as an integrated institution of the University of Applied Sciences of Bingen. I.E.S.A.R. carries out applied research projects and advisory services mainly in the areas of environmental law and economy, environmental management and international cooperation for development at the University of Applied Sciences and presents itself as an interdisciplinary institution.

The Institute fulfils its assignments particularly by:

- Undertaking projects in developing countries
- Realization of seminars in the areas of environment and development
- Research for European Institutions
- Advisory service for companies and know-how-transfer

#### Main areas of research

- **European environmental policy**
  - Research on implementation of European law
  - Effectiveness of legal and economic instruments
  - European governance
- **Environmental advice in developing countries**
  - Advice for legislation and institution development
  - Know-how-transfer
- **Companies and environment**
  - Environmental management
  - Risk management

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The Society for Institutional Analysis was established in 1998. It is located at the University of Applied Sciences in Darmstadt and the University of Göttingen, both Germany.

The sofia research group aims to support regulatory choice at every level of public legislative bodies (EC, national or regional). It also analyses and improves the strategy of public and private organizations.

The sofia team is multidisciplinary: Lawyers and economists are collaborating with engineers as well as social and natural scientists. The theoretical basis is the interdisciplinary behaviour model of homo oeconomicus institutionalis, considering the formal (e.g. laws and contracts) and informal (e.g. rules of fairness) institutional context of individual behaviour.

The areas of research cover

- Product policy/REACH
- Land use strategies
- Role of standardization bodies
- Biodiversity and nature conservation
- Water and energy management
- Electronic public participation
- Economic opportunities deriving from environmental legislation
- Self responsibility

sofia is working on behalf of the

- VolkswagenStiftung
- German Federal Ministry of Education and Research
- Hessian Ministry of Economics
- German Institute for Standardization (DIN)
- German Federal Environmental Agency (UBA)
- German Federal Agency for Nature Conservation (BfN)
- Federal Ministry of Consumer Protection, Food and Agriculture

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sofia

Öko-Institut e.V.  
Institut für angewandte Ökologie  
Institute for Applied Ecology



NATUUR  
& MILIEU



## elni

*In many countries lawyers are working on aspects of environmental law, often as part of environmental initiatives and organisations or as legislators. However, they generally have limited contact with other lawyers abroad, in spite of the fact that such contact and communication is vital for the successful and effective implementation of environmental law.*

*Therefore, a group of lawyers from various countries decided to initiate the Environmental Law Network International (elni) in 1990 to promote international communication and cooperation worldwide. elni is a registered non-profit association under German Law.*

*elni coordinates a number of different activities in order to facilitate the communication and connections of those interested in environmental law around the world.*

### Coordinating Bureau

Three organisations currently share the organisational work of the network: Öko-Institut, IESAR at the University of Applied Sciences in Bingen and sofia, the Society for Institutional Analysis, located at the University of Darmstadt. The person of contact is Prof. Dr. Roller at IESAR, Bingen.

### elni Review

The elni Review is a bi-annual, English language law review. It publishes articles on environmental law, focusing on European and international environmental law as well as recent developments in the EU Member States. elni encourages its members to submit articles to the elni Review in order to support and further the exchange and sharing of experiences with other members.

The first issue of the elni Review was published in 2001. It replaced the elni Newsletter, which was released in 1995 for the first time.

The elni Review is published by Öko-Institut (the Institute for Applied Ecology), IESAR (the Institute for Environmental Studies and Applied Research, hosted by the University of Applied Sciences in Bingen) and sofia (the Society for Institutional Analysis, located at the University of Darmstadt).

### elni Conferences and Fora

elni conferences and fora are a core element of the network. They provide scientific input and the possibility for discussion on a relevant subject of environmental law and policy for international experts. The aim is to gather together scientists, policy makers and young researchers, providing them with the opportunity to exchange views and information as well as to develop new perspectives.

The aim of the elni fora initiative is to bring together, on a convivial basis and in a seminar-sized group, environmental lawyers living or working in the Brussels area, who are interested in sharing and discussing views on specific topics related to environmental law and policies.

### Publications series

elni publishes a series of books entitled "Publications of the Environmental Law Network International". Each volume contains papers by various authors on a particular theme in environmental law and in some cases is based on the proceedings of the annual conference.

### elni Website: elni.org

The elni website [www.elni.org](http://www.elni.org) contains news about the network. The members have the opportunity to submit information on interesting events and recent studies on environmental law issues. An index of articles provides an overview of the elni Review publications. Past issues are downloadable online free of charge.

### elni Board of Directors

- Martin Führ - Society for Institutional Analysis (sofia), Darmstadt, Germany;
- Jerzy Jendroska - Centrum Prawa Ekologicznego (CPE), Wrocław, Poland;
- Isabelle Larmuseau - Vlaamse Vereniging voor Omgevingsrecht (VVOR), Ghent, Belgium;
- Delphine Misonne - CEDRE - Center for Environmental Law, Université Saint-Louis Bruxelles, Belgium
- Marga Robesin - Stichting Natuur en Milieu, Utrecht, The Netherlands;
- Gerhard Roller - Institute for Environmental Studies and Applied Research (I.E.S.A.R.), Bingen, Germany.

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