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CIVIL LAW PROTECTION AGAINST HARMFUL IMISSIONS IN CONNECTION WITH ENVIRONMENTAL PROTECTION

GRAĐANSKOPRAVNA ZAŠTITA OD ŠTETNIH IMISIJA U VEZI SA ZAŠTITOM OKOLIŠA

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ABSTRACT

This article analyses the legal framework for the protection against harmful immissions with a special focus on environmental law. It analyses the civil remedies available under Croatian law, including the action for injunctive relief (actio negatoria), and looks at their practical application in preventing and remedying environmental damage. The study contrasts national legal instruments with supranational protection mechanisms, in particular those established by the European Court of Human Rights under Article 8 of the European Convention. The paper highlights the interaction between property rights, neighbouring rights and environmental obligations and emphasises the legal distinction between permissible, excessive, direct and indirect immissions. Through a comparative analysis, the authors examine the development of judicial interpretation, particularly in relation to the right to a healthy environment. The paper concludes that while national law provides a structured approach to immissions, the European framework extends protection through a dynamic interpretation, thereby strengthening environmental rights as an essential component of human rights. The main legal concepts are explained on the basis of case law and statutory interpretation.

Keywords: immissions, environmental law, negatory action, civil liability, neighbouring rights

SAŽETAK

Ovaj članak analizira pravni okvir zaštite od štetnih imisija s posebnim naglaskom na pravo okoliša. Analiziraju se građanskopravna sredstva dostupna prema hrvatskom pravu, uključujući tužbu za zabranu smetanja (actio negatoria), te se razmatra njihova praktična primjena u sprječavanju i saniranju štete u okolišu. U radu se nacionalni pravni instrumenti uspoređuju s nadnacionalnim mehanizmima zaštite, osobito onima koje je uspostavio Europski sud za ljudska prava temeljem članka 8. Europske konvencije. Naglašava se interakcija između vlasničkih prava, susjedskih prava i obveza zaštite okoliša, te se ističe pravna razlika između dopuštenih, prekomjernih, izravnih i neizravnih imisija. Kroz komparativnu analizu autori istražuju razvoj sudske prakse, osobito u vezi s pravom na zdrav okoliš. Zaključuje se da, iako

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nacionalno pravo osigurava strukturirani pristup pitanju imisija, europski pravni okvir proširuje zaštitu kroz dinamično tumačenje, čime se prava na okoliš učvršćuju kao bitna sastavnica ljudskih prava. Glavni pravni pojmovi objašnjeni su na temelju sudske prakse i zakonskog tumačenja.

Ključne riječi: imisije, pravo okoliša, negatorna tužba, građanskopravna odgovornost, susjedska prava

INTRODUCTION

The issue of harmful immissions and their legal effects is the subject of much academic attention in the fields of property law and environmental protection. Previous research has extensively analysed the civil law mechanisms available for the protection of property rights, particularly in relation to environmental nuisances. Klarić (1996) provided a fundamental insight into the scope of negatory actions in the context of unlawful immissions, while Gliha and Josipović (2003) elaborated on the conditions under which property owners can seek judicial relief. Crnić and Matić (2006) further clarified the relationship between environmental damage and the property owner's right to protection from indirect interference. Proso (2015) contributed to the understanding of environmental liability in civil law by addressing both preventive and repressive aspects. In addition, Popov (2012) and Gavella et al. (2007) examined the role of neighbouring law in mitigating conflicts arising from environmental impact. Taken together, these studies form the basis for analysing the overlap between civil liability and environmental law presented in this paper.

1. METHODOLOGY

This article applies the normative (dogmatic) legal method used to analyse and interpret binding legal sources, including constitutional provisions, laws, directives and case law relevant to property rights, immissions and environmental protection. It focuses on the Croatian Act on Property and Other Rights in Rem and the Obligations Act, which regulate negatory actions and liability for environmental harm. The paper also analyses the European Parliament's Directive 2004/35/EC and the related EU acquis in the field of environmental liability. Proso (2015), for example, addresses the structure of Croatian environmental law and emphasises the importance of substantive and procedural norms in determining civil liability for environmental damage (Proso, 2015).The comparative method is used to contrast national (Croatian and Serbian) regulations with supranational legal frameworks such as the European Convention on Human Rights (ECHR). The paper focuses in particular on how Article 8 of the ECHR has been interpreted by the European Court of Human Rights (ECtHR) to include the right to live in a healthy environment.

Mihelčić and Marochini (2014) build an important bridge between property law and human rights by comparing the vindication claim in Croatian law with the right to respect for the home under Article 8 of the ECHR (Mihelčić & Marochini, 2014). In addition, Lucić and Márton (2012) emphasise strict liability in civil cases of environmental damage in different legal systems, thus contributing to a broader comparative perspective (Lucić & Márton, 2012). The paper analyses important ECtHR decisions (e.g. Fadeyeva v. Russia, Hatton v. UK) and Croatian national case law. In this way, judicial trends in the interpretation and enforcement of

rights in relation to harmful immissions are identified. Bojan Pajtić (2015) emphasises the importance of international case law and soft law instruments (e.g. the Stockholm Declaration) in shaping national environmental liability frameworks (Pajtić, 2015). Legal doctrine is analysed through a comprehensive review of academic literature, which serves to clarify legal concepts (e.g. immissions, environmental damage, negatory action, nuisance) and to examine legal developments de lege lata and de lege ferenda.

Petrak (2013), for example, discusses the historical and theoretical background of revenge claims and establishes a link between the Roman legal tradition and modern real law systems (Petrak, 2013). Proso (2015) and Vučković (2019) also discuss civil liability and the challenges posed by "permitted" environmental risks and immission-related damages, particularly in relation to insurance and state-authorised activities (Vučković, 2019). The analytical and systematic method is applied to logically classify the types of immissions (direct/indirect, permissible/excessive), systematise the civil remedies (preventive/remedial) and examine the overlaps between private property rights and public environmental interests. This analytical structure reflects the approach taken in the national doctrine analysed (e.g. Pajtić, 2015) and is in line with European legal developments (Jukić, 2015). The paper critically assesses the current legal framework (de lege lata) and at the same time formulates normative proposals for improvements (de lege ferenda). The aim is to provide coherent, realistic recommendations for the harmonisation of national regulations with EU environmental law and human rights jurisprudence. This dual perspective is underpinned by the findings of Gongeta (2021), who assesses the effectiveness of the EU legal framework for environmental protection and its impact on national reforms (Gongeta, 2021).

a. Theses and Hypotheses

This paper starts from the realisation that traditional civil law mechanisms - in particular the actio negatoria remain normatively and procedurally limited in their ability to address the increasingly complex and cumulative effects of environmental impacts. Although these remedies provide a basis for protecting property rights from unlawful interference, they do not fully address the evolving challenges posed by contemporary environmental degradation, particularly in cases involving long-term, indirect or transboundary harm. At the same time, through a dynamic and teleological interpretation of Article 8 of the European Convention on Human Rights, the European Court of Human Rights has progressively established environmental protection as an implicit component of the right to private and family life. This emerging standard underlines the need for harmonisation between national civil liability regimes and supranational legal frameworks.

Accordingly, the central hypotheses to be explored in this paper are, first, that national courts continue to interpret civil remedies for environmental harm primarily through the lens of property law, neglecting the broader public interest dimension reflected in European human rights jurisprudence. Secondly, it is hypothesised that the integration of EU environmental law, in particular the polluter pays principle and the precautionary principle as codified in Directive 2004/35/EC, can significantly strengthen both the preventive and compensatory functions of national legal systems in responding to unlawful immissions and environmental damage. This paper seeks to test these hypotheses through a doctrinal, comparative and jurisprudential analysis of the relevant national and international sources.

2. RESULTS

The results of this study confirm the central thesis that the traditional civil law instruments, in particular the actio negatoria, are normatively based on the protection of property rights, but are insufficient in terms of scope and adaptability to meet today's legal challenges posed by environmental immissions. The literature analysed shows a consistent pattern: civil law remedies are predominantly limited to individualised property disputes and lack a systemic response to broader ecological damage or collective environmental interests (Proso, 2015; Pajtić, 2015).Comparative law analysis, in particular of the case law of the European Court of Human Rights, supports the second thesis: the ECtHR, through its evolving interpretation of Article 8 ECHR, has developed a functional understanding of the right to a healthy environment as an element of private and family life (Rožac & Rosandić, 2022; Mihelčić & Marochini, 2014).

This jurisprudence obliges national authorities to prevent, mitigate and remedy environmental harm, even if environmental rights are not explicitly recognised in the constitution or in law. Empirical review of national case law and doctrinal commentary confirms Hypothesis 1: Croatian and regional courts apply civil remedies within a rigid framework of property law, often failing to recognise the broader impacts of environmental interference on public health and ecological integrity (Vučković, 2019; Klarić, 1996; Gliha & Josipović, 2003). Remedial measures are usually limited to stopping the encroachment or compensating for property damage without addressing the underlying structural causes or long-term environmental consequences.

Hypothesis 2 is also supported: The EU legal framework, in particular Directive 2004/35/EC, introduces key principles notably the polluter pays principle and the precautionary principle which, if implemented and enforced more effectively, would significantly improve the responsiveness of civil law to environmental harm. Legal scholars such as Lucić and Márton (2012) and Gongeta (2021) emphasise that these principles shift the burden of environmental risk management from those affected to those who carry out environmentally hazardous activities. Furthermore, doctrinal analyses show that concepts such as strict liability for environmental damage, collective access to justice and public interest litigation remain underdeveloped in the national context, although they are becoming increasingly important in comparative legal systems (Lucić & Márton, 2012; Petrak, 2013). Standing in environmental disputes continues to be interpreted narrowly, hampering access to effective remedies and undermining the preventive function of civil liability.1 In summary, the findings show that civil law mechanisms for the protection of the environment require clear doctrinal, legislative and judicial reform. This includes a reinterpretation of existing remedies in the light of supranational standards, the inclusion of environmental rights in the substantive core of property law and the strengthening of procedural safeguards for access to justice in environmental matters.

3. THE CIVIL LAW CONCEPT OF IMMISSIONS AND THE SCOPE OF NEGATORY ACTION

The concept of immission is a fundamental element of civil law systems to regulate relations between neighbouring owners, especially in contexts where environmental harm overlaps with private rights. In Croatian law, as in other continental European legal traditions, immissions are primarily regulated by the doctrine of neighbouring rights (susjedska prava) and specific real actions (rei vindicatio, actio negatoria). The central instrument for protection against unlawful or excessive immissions is the actio negatoria (negatory action), which is codified in the Act on Property and Other Rights in Rem (e.g. AP). immissions are classically divided into direct and indirect immissions, as well as permissible and excessive immissions. Direct immissions involve a physical intrusion into a property through emissions from another, while indirect immissions occur through air, water or noise without a tangible connection. Case Gž 667/2016-2, decided by the County Court in Dubrovnik, illustrates the limits of injunctive relief in the regulation of excessive water runoff and septic tank discharges.

Despite clear evidence of a nuisance, the court upheld the first instance judgement dismissing the plaintiffs' claim for insufficient evidence of illegality or exceeding socially accepted thresholds. Academic literature supports a broad interpretation of immissions in the light of modern ecological sensitivities. Klarić (1996) and Gliha & Josipović (2003) emphasise the importance of balancing the property rights of emitters and receivers. However, modern doctrine increasingly recognises the environmental dimension of such interventions, particularly when recurring and cumulative emissions cause structural damage or ecological degradation (Pajtić, 2015). According to Article 110 of the AP, an owner may request the cessation of disturbances that exceed the level usually tolerated in relations between neighbours. In practise, however, this threshold is interpreted restrictively, often favouring the formal legality of the issuer’s behaviour over the material harm to the injured party. For example, in Rev 1198/2012-3, the Croatian Supreme Court rejected an action for compensation for a reduction in the value of real estate caused by the proximity of a power plant and emphasised that, despite clear negative consequences, there was no direct unlawful conduct. Doctrinal voices such as Petrak (2013) and Proso (2015) argue in favour of a reinterpretation of traditional property rights in line with environmental objectives. They propose recontextualising actio negatoria to address not only direct interference with property, but also less visible but equally damaging interference with the environment.

This is particularly relevant in urban and industrial areas, where pollution, noise and vibration are common but not always legally actionable. In case Gž 1257/2021-2, the District Court in Varaždin overturned a first instance decision ordering the diversion of rainwater drainage, on the grounds of technical conformity and proportionality.ECtHR case law also emphasises the inadequacy of traditional civil remedies when environmental damage affects fundamental rights. Although the ECtHR's decisions in property disputes are not formally binding, they influence national courts by characterising environmental degradation as a violation of Article 8 of the European Convention on Human Rights the right to private and family life. In Turković v. Croatia (2018), the Court recognised that living near a waste disposal facility is potentially harmful, even if the operation has been officially authorised. To overcome these normative tensions, scholars such as Mihelčić & Marochini (2014) call for the integration

of environmental concerns into the substance of civil law doctrines. Their analysis argues in favour of extending the application of negatory actions to situations where environmental harm, while not manifestly unlawful, is objectively harmful. To summarise, the traditional civil law framework for immunity, although robust in doctrine, needs to be adapted to address the realities of environmental harm. Injunctive relief must evolve from a narrowly defined property protection mechanism to a flexible legal instrument capable of reconciling individual property rights with broader environmental and public health concerns. This would bring national law into line with evolving European standards and fulfil its preventative and remedial function in environmental policy.

4. THE STRICT LIABILITY AND THE THRESHOLD OF EXCESSIVE ENVIRONMENTAL HARM

Strict liability for environmental harm is a cornerstone of modern environmental law and is designed to ensure that those who cause damage to the environment are held accountable regardless of fault. In civil law systems such as the Croatian one, the legal basis for strict liability is found in Article 1047 of the Obligations Act (e.g. OA), which provides that persons who carry out activities that pose an increased risk of harm can be held liable for damages without the need to prove intent or negligence. This principle is particularly relevant in connection with emissions and other harmful immissions which, although not unlawful per se, lead to a significant impairment of property or human health.

The decision Gž-96/13-2 of the Bjelovar County Court is exemplary in this respect. In this case, the court ruled that the construction of a public bypass, although authorised and carried out in the public interest, led to a 20% reduction in the market value of the plaintiffs' land, as access and usability were impaired. The court found that this constituted "excessive damage" for which compensation was due regardless of the legality of the works. This case clearly demonstrates the application of strict liability in scenarios involving lawful but disruptive infrastructure projects. This reasoning is in line with the academic positions of Proso (2015) and Pajtić (2015), who argue that environmental harm must always be compensated when it exceeds the limits of normal social tolerance. According to this view, lawfully emitted pollutants or noise should not be exempt from liability if they result in quantifiable harm. This approach has been reaffirmed by the ECtHR in cases such as Ž.B. v. Croatia and Štimac v. Croatia, in which the Court emphasised the state's positive obligations to ensure protection from prolonged exposure to environmental hazards.

While Croatian courts are increasingly recognising strict liability in the context of hazardous activities and environmental pollution, they are still reluctant to extend this doctrine to all cases involving state-authorised activities. In Case U-III/1526/2016, the Constitutional Court upheld a lower court's decision to deny compensation for alleged harmful immissions caused by a nearby substation, citing procedural grounds and the lack of direct evidence of causality. This reveals a tension between doctrinal potential and judicial conservatism. In contrast, European human rights jurisprudence offers a broader and more rights-orientated interpretation of environmental harm. In Turković v. Croatia, for example, the ECtHR recognised the negative impact of living near the Jakuševac landfill, even though formal regulations were complied with, and acknowledged the state's duty to ensure effective

environmental protection. This indicates a two-pronged approach: National civil courts continue to focus on legality and evidence, while the ECtHR assesses the broader context of environmental harm. The academic consensus supports the idea that strict liability should apply not only to extremely dangerous activities, but to all human endeavours that cause foreseeable and measurable harm to the environment or neighbouring properties. Lucić and Márton (2012) emphasise that the shift towards objective liability is crucial for the alignment of national civil codes with the EU environmental directives and the principles of the Aarhus Convention. Ultimately, the threshold of "excessive" harm must be understood to evolve in parallel with environmental awareness and technological development. Courts should not only assess harm based on economic measures, but should also consider ecological disruption, quality of life and the cumulative effects of long-term exposure to harmful emissions. An updated and proactive application of strict liability would strengthen both private law protection and the public interest in environmental sustainability.Judicial remedies in property law

5. THE ENVIRONMENTAL DIMENSION OF PROPERTY RIGHTS UNDER THE ECHR

The European Convention on Human Rights (ECHR), which traditionally focuses on civil and political rights, has developed into a powerful instrument for environmental protection through its jurisprudential interpretation by the European Court of Human Rights (ECtHR). In particular, Article 8 of the Convention, which guarantees the right to respect for private and family life, has served as the basis for a number of decisions recognising the negative impact of environmental harm on individual well-being and quality of life.

This development is of great significance for domestic legal systems such as Croatia's, where civil remedies such as actio negatoria are limited in their ability to address diffuse and systemic ecological disturbances. In its case law, the ECtHR has gradually established that serious environmental damage can constitute a violation of Article 8 if it significantly affects a person’s home and private life. An important example is the case of López Ostra v. Spain (1994), in which the Court found a violation of Article 8 because the operation of a waste treatment plant in the immediate vicinity of the applicant’s home caused severe odour and noise nuisance. This precedent shaped later Croatian cases such as Ž.B. v. Croatia and Turković v. Croatia, in which the ECtHR emphasised the duty of states to provide effective remedies and ensure adequate environmental regulation.

In Turković v. Croatia, the applicants lived near the Jakuševac-Prudinec landfill in Zagreb. Despite partial compliance, the court found persistent environmental pollution, including odour nuisance and increased levels of particulate matter, which affected the plaintiffs’ daily lives. The Court found that the Croatian authorities had failed to strike an appropriate balance between the general interest and the applicants' right to use their home, in breach of Article 8. This judgement reaffirms the view that procedural legality does not absolve the state of its responsibility when the substance of rights is undermined. Furthermore, in 'B. v. Croatia, the Court addressed the issue of persistent failure to act in domestic violence cases, but established an important link between this procedural violation and environmental jurisprudence by reaffirming the state’s positive obligations under Article 8 to prevent foreseeable harm to physical and psychological integrity.

The decision extends the applicability of human rights standards to situations where the state fails to protect individuals from hazardous living conditions. This development in case law is in line with academic arguments that environmental rights should not be considered in isolation, but rather as an integral part of established civil liberties. Mihelčić and Marochini (2014) argue that the rights to property, privacy and health form a triad that supports the justiciability of environmental claims within constitutional and conventional frameworks. This interpretation is reinforced by the dynamic approach of the ECtHR, which interprets the Convention as a living instrument that can adapt to new societal challenges. From a doctrinal point of view, the inclusion of environmental harm in the content of Article 8 has profound implications. It opens the door to indirect judicial review of environmental policies and practises that might otherwise escape legal scrutiny under national civil law. While Croatian courts have traditionally focused on concrete and individual harms, the ECtHR promotes a broader perspective that considers cumulative and systemic impacts.

It is noteworthy that this judicial shift does not require that the environmental degradation reaches catastrophic proportions. In Fadeyeva v. Russia (2005), the Court found that although the pollution caused by a steel mill was not immediately life-threatening, it was sufficient to constitute a violation of Article 8 because it had a lasting adverse effect on the applicant's quality of life. This proportionality-based analysis provides a model for Croatian courts and demonstrates that constitutional and conventional rights can serve as a defence against acute and chronic environmental harm. These principles are in line with the Aarhus Convention ratified by Croatia, which emphasises the interdependence of environmental protection and human rights. Failure to ensure these procedural safeguards can lead to a violation of the ECHR even in the absence of demonstrable physical harm.

To summarise, the case law of the ECtHR significantly enriches the legal framework for environmental protection by interpreting classical human rights in a way that does justice to modern ecological threats. For Croatian law, this means that civil remedies such as the negative action must be understood and applied in conjunction with constitutional and conventional norms. Environmental degradation, even when indirect or lawful, can violate fundamental rights protected by the ECHR, and Croatian courts must be prepared to embrace this broader rights-based paradigm.

6. JUDICIAL PRACTICE AND PROCEDURAL CHALLENGES IN ENVIRONMENTAL DISPUTES

The effective resolution of environmental disputes depends not only on the substantive legal norms, but also on the procedural mechanisms by which rights and obligations are enforced. In the Croatian legal system, civil proceedings are still the main way to address harmful emissions and related environmental damage. However, this framework is characterised by procedural rigidity, a restrictive interpretation of standing, the burden of proof and the limited role of public interest litigation factors that often undermine access to justice and the realisation of environmental rights. A key procedural challenge lies in the doctrine of standing, which continues to be interpreted narrowly in environmental disputes. In most cases involving immissions, the plaintiff must prove direct, individual harm a standard that effectively excludes broader environmental or collective interests from judicial protection.

In Case U-III/1526/2016, the Croatian Constitutional Court dismissed a constitutional challenge to the legality of pollutant emissions from an energy plant on procedural grounds, emphasising that there was insufficient individual harm and evidence of causality. This case reflects a broader trend in national case law which procedural obstacles prevent effective adjudication of environmental claims, particularly when the harm is diffuse or affects communities rather than individuals, which is exacerbated by the burden of proof placed on plaintiffs. In environmental claims, plaintiffs must often prove not only the existence of harm, but also its unlawfulness, the threshold of its excessiveness, and a causal connection with the defendant's activity. While these requirements are rooted in tort law, they are not appropriate for complex environmental scenarios with cumulative, long-term or indirect effects. As set out in VSRH Rev 1198/2012-3, the Supreme Court dismissed a claim for damages attributable to nearby infrastructure on the grounds of insufficient causality and the lack of unlawful behaviour despite the devaluation of the plaintiff's land. Courts often rely on expert evidence to establish technical facts relating to pollution, noise levels or property devaluation.

However, this reliance can be problematic if the expert reports are challenged, selectively interpreted or presented without sufficient transparency. In Case No. Gž-96/13-2, the Bjelovar County Court awarded compensation for the loss of market value due to the expansion of infrastructure on the basis of a detailed expert opinion. In many other cases, however, contradictory expert opinions or vague conclusions have led to the dismissal of claims. Public interest litigation and collective redress mechanisms are still underdeveloped in Croatian environmental law. Although Croatia has ratified the Aarhus Convention, which guarantees access to justice in environmental matters, its application in the country is limited. Non-governmental organisations and civil society actors have to overcome high hurdles to initiate legal proceedings, unless they can prove a personal or property interest.

This approach is in stark contrast to the case law of the ECtHR, which increasingly recognises the public dimension of environmental harm. Moreover, judicial deference to administrative decisions often undermines environmental claims. Courts tend to uphold activities authorised by permits or licences, even if they have questionable environmental impacts. In the Turković v. Croatia case, the ECtHR criticised the Croatian authorities for failing to take adequate safety precautions and monitoring measures despite complying with regulations. The ECtHR's insistence on substantive law over procedural formalities signals a normative shift that national courts have not yet fully internalised. Academic literature calls for procedural reform to strengthen environmental jurisprudence. Mihelčić and Marochini (2014) emphasise the need for procedural rules that take into account the specificity of environmental harm, including shifting the burden of proof, enabling class actions and recognising environmental damage as a legal interest in its own right.

Similarly, Lucić and Márton (2012) argue in favour of procedural innovations that are consistent with EU environmental law, such as extended standing for NGOs and simplified access to injunctions. Another persistent problem is the lack of specialised judicial bodies or environmental courts capable of dealing with the technical and interdisciplinary nature of environmental disputes. The generalist orientation of Croatian civil courts leads to inconsistent jurisprudence and a lack of consistency in balancing environmental and property rights. The establishment of specialised chambers or the introduction of judicial training in environmental matters could significantly improve procedural efficiency and legal certainty. In summary,

while substantive environmental law in Croatia has been gradually modernised, procedural shortcomings remain a major obstacle to effective enforcement. In order to ensure genuine access to environmental justice, not only do national procedures need to be adapted to EU and ECtHR standards, but litigation strategies also need to be reorganised to take into account the collective, long-term and systemic nature of environmental damage. Without these adjustments, civil proceedings will continue to offer limited remedies in cases where the environment and public health are at stake.

7. HARMONIZING DOMESTIC LAW WITH EU ENVIRONMENTAL PRINCIPLES

One of the most important steps for the development of environmental protection in civil law lies in the harmonisation of the national legal framework with the principles and standards of European Union environmental law. As an EU member state and signatory to numerous international environmental instruments, including the Aarhus Convention and the European Convention on Human Rights, Croatia has a dual obligation to implement EU directives and interpret its domestic law in line with evolving European case law. One of the most important EU instruments is Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage (Environmental Liability Directive - ELD). The directive enshrines the "polluter-pays" principle and creates a framework for strict liability for environmental damage caused by professional activities. However, as Gongeta (2021) / Rožac & Rosandić (2022) note, the transposition of this directive into Croatian law has been uneven, with several interpretative uncertainties and enforcement gaps limiting its practical effectiveness.

The Croatian legal system still relies heavily on traditional property and tort law doctrines, which are not fully in line with the EU's preventive approaches. For example, the predominant emphasis on fault-based liability in practise diminishes the preventive function of environmental regulations. As Lucić and Márton (2012) argue, the integration of EU principles such as precaution, sustainability and extended producer responsibility requires both legislative reform and a change in legal culture. One of the most important reforms de lege ferenda should include the explicit inclusion of the precautionary principle in the Code of Obligations (OA). This would mean that legal liability is recognised not only after damage has occurred, but also in situations where significant environmental risks are been identified but not yet realised. Such a standard would close the gap between civil and administrative precautionary systems and encourage earlier intervention against potentially harmful emissions. In addition, the concept of ecological damage, as opposed to private damage, should be formally incorporated into the civil liability system.

While Croatian law currently recognises damage to private property and personal health, it lacks a clear dogmatic basis for environmental damage as damage to a protected public good. Proso (2015) and Pajtić (2015) emphasise that environmental damage must be actionable independently of personal damage and propose the establishment of a public environmental fund or an ombudsman authorised to make claims on behalf of ecosystems or the public. Another important starting point for reform lies in procedural law. Harmonisation with the Aarhus Convention requires not only access to justice, but also the removal of procedural

obstacles such as high litigation costs, restrictive standing, and rigid standards of proof. The establishment of specialised environmental chambers or courts, as practised in several EU countries, would improve both the consistency and efficiency of case law. As Mihelčić and Marochini (2014) note, specialisation allows for a more nuanced assessment of the scientific, technical and regulatory complexity of environmental cases.Education and legal training are also essential components of harmonisation.

Judges, prosecutors and members of the legal profession should receive ongoing training in EU environmental law and in the interpretative methods of the Court of Justice of the European Union (CJEU) and the ECtHR. This is particularly important given the rapid development of environmental jurisprudence and the cross-cutting nature of environmental damage, and the need for greater inter-institutional coordination. Co-operation between environmental regulators, administrative authorities and civil courts needs to be improved to ensure uniform interpretation and enforcement. The current fragmentation often leads to contradictory results, as seen in cases such as Turković v. Croatia and Štimac v. Croatia, where formal compliance coexisted with the substantive violation of individual rights. In summary, the harmonisation of Croatian civil law with EU environmental standards requires a multi-layered approach: Doctrinal development, legislative reform, procedural innovation, institutional specialisation, and legal education. These efforts will not only improve legal coherence and effectiveness, but also strengthen the resilience of legal systems in addressing the complex and systemic challenges of environmental protection.

CONCLUSION

The present analysis confirms that traditional civil law remedies, such as the actio negatoria, while essential for safeguarding property rights, are insufficient when faced with the diffuse, systemic, and long-term nature of environmental harm. The Croatian legal framework, though rooted in established property and tort law traditions, must be reconceptualized to address the broader societal and ecological dimensions of harmful immissions.

The jurisprudence of the European Court of Human Rights has significantly contributed to this shift, interpreting Article 8 ECHR to include the right to live in a healthy environment and obligating states to ensure effective protection against environmental degradation.The study reveals a pressing need for harmonization of domestic civil liability regimes with EU environmental law and human rights standards. This includes the incorporation of the precautionary principle, polluter pays principle, and the recognition of ecological damage as distinct from individual harm. Furthermore, Croatian civil procedure must be reformed to lower access barriers, enhance the role of expert evidence, and allow for collective redress mechanisms.

Standing rules must evolve to enable public interest litigation, especially in environmental matters where harm transcends individual boundaries.Doctrinally, the extension of strict liability to all environmentally hazardous activities is essential to overcoming evidentiary challenges and ensuring fair risk allocation. National courts must align more closely with ECtHR reasoning, particularly in recognizing that regulatory compliance does not negate substantive rights violations. Judicial deference to administrative permits must give way to a rights-based assessment of environmental harm.Ultimately, the integration of EU and ECHR

jurisprudence into national civil law demands more than legal transposition—it requires cultural and institutional transformation. Legal education, specialized environmental courts, and inter-agency coordination are key to building a coherent and responsive environmental justice system. Only through such a multidimensional reform can civil law evolve into a robust instrument for both individual protection and ecological preservation in the 21st century.

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