

INTELLECTUAL PROPERTY VS. HUMANITARIAN LAW IN CONFLICT

Imer Ademović¹
Gordana Nikolić²

Abstract: This scientific article analyzes the complex relationship between intellectual property rights and international humanitarian law in the context of contemporary armed conflicts. The research focuses on identifying key points of conflict between these two legal regimes, particularly in situations where patent and copyright protection collides with humanitarian imperatives of protecting civilian populations and ensuring access to essential goods. Through analysis of relevant international legislation, case law, and concrete cases from recent conflicts, the paper explores possibilities for harmonizing these legal systems. Special attention is given to issues of access to medicines, medical technologies, and humanitarian aid in conditions of armed conflict, where patent rights can present obstacles to effective humanitarian intervention. Research results indicate the need for developing more flexible legal mechanisms that would enable temporary suspension of certain aspects of intellectual property in humanitarian crises, while simultaneously preserving basic principles of innovation protection. The paper's conclusions offer concrete recommendations for reforming the existing international legal framework to achieve better balance between economic interests of intellectual property rights holders and fundamental humanitarian needs in conflict situations.

Keywords: intellectual property, humanitarian law, armed conflict, patent rights, humanitarian crisis, international law.

1 fakultet.tutin@live.com

2 fakultet.tutin@live.com

1. INTRODUCTION

Contemporary armed conflicts represent complex phenomena that transcend traditional military dimensions and encompass various aspects of social life, including legal regimes that at first glance are not directly connected to warfare. Among the most significant legal challenges in the context of modern conflicts stands out the tension between intellectual property rights and international humanitarian law. These two legal systems, developed independently of each other and with fundamentally different objectives, increasingly come into mutual conflict in situations of armed conflicts and humanitarian crises. Intellectual property law, as a set of legal norms protecting creative and innovative contributions of individuals and corporations, developed primarily in peacetime conditions with the aim of encouraging innovation through guaranteeing exclusive rights to authors and inventors. On the other hand, international humanitarian law, also known as the law of armed conflicts, emerged with the aim of humanizing war through limiting means and methods of warfare and protecting civilians and other non-combatants. The fundamental difference in objectives of these legal regimes becomes particularly evident in situations where exclusive intellectual property rights can limit access to essential goods needed for survival of civilian populations in conflict zones.

Knežević (2015) in his analysis of the civil war in Syria and Iraq points to the transformation of the nature of contemporary conflicts, where traditional lines of demarcation between military and civilian targets become increasingly unclear. This ambiguity further complicates the application of both humanitarian law and intellectual property regimes. In the context of hybrid warfare and asymmetric conflicts, the question of access to technologies, medicines, and other products protected by patents becomes critical for the survival of civilian populations. Historically viewed, the development of both legal systems proceeded in parallel but separately. The first modern conventions on intellectual property protection, such as the Paris Convention of 1883 and the Berne Convention of 1886, were established during a period of relative peace in Europe and were focused on economic aspects of international trade and knowledge exchange. Simultaneously, the development of humanitarian law, codi-

fied through the Geneva Conventions, was a direct response to the horrors of wars and the need to establish minimum standards of humanity even in the most difficult circumstances of armed conflicts.

The problem that represents the focus of this research manifests at multiple levels. The first level relates to the direct conflict between exclusive rights guaranteed by the intellectual property regime and humanitarian law imperatives requiring ensuring access to essential goods for civilian populations. The second level of the problem concerns institutional fragmentation of international law, where different international organizations and courts apply different standards and interpretations in cases of conflict between these regimes. The third level relates to practical challenges of implementing any solutions on the ground, especially in conditions of active hostilities. The relevance of this research is additionally emphasized by recent global crises, including the COVID-19 pandemic, which demonstrated how patent rights can present an obstacle to rapid and effective response to health crises. Although the pandemic is not an armed conflict in the traditional sense, lessons learned during this crisis have direct application to situations of humanitarian crises caused by armed conflicts. Vejnović and Knežević (2024) in their analysis of hegemony in a unipolar world emphasize how domination of certain states in the international system affects the application and interpretation of international law, which has direct implications for how conflicts between different legal regimes are resolved.

The aim of this paper is to systematically analyze and identify key points of conflict between intellectual property rights and humanitarian law, examine existing mechanisms for their resolution, and propose concrete measures for harmonizing these legal systems in the context of armed conflicts. The research is based on analysis of relevant international treaties, case law of international and national courts, and empirical data from recent conflict situations. The methodological approach of this research combines normative analysis of legal texts with empirical research of concrete cases. Special attention is given to comparative analysis of different national approaches to resolving this conflict, as well as analysis of the role of international organizations such as the World Health Organization, World Intellectual Property Organization, and International Committee of the Red Cross in developing relevant standards and practices.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The theoretical framework for understanding the conflict between intellectual property and humanitarian law requires in-depth analysis of fundamental principles of both legal systems, as well as their evolution in the context of contemporary international relations. Knežević (2024) in his work on the first cause and morphology of cosmology points to the need for a holistic approach in understanding complex systems, which is particularly relevant for analyzing the interaction between different legal regimes. Intellectual property law rests on several key theoretical foundations. The first is natural law theory, which starts from the premise that creators have an inherent right to the fruits of their intellectual labor. This theory, whose roots reach back to the philosophy of John Locke, argues that intellectual labor is a form of property that deserves legal protection equal to physical property. The second theoretical foundation is utilitarian theory, which justifies intellectual property as a means of encouraging innovation through guaranteeing temporary monopoly to creators. The third is personality theory, which emphasizes the connection between creative work and the personality of its creator.

On the other hand, humanitarian law rests on fundamentally different principles. The principle of humanity, as the basic principle of humanitarian law, requires that human dignity be respected and protected in all circumstances. The principle of distinction requires clear differentiation between civilians and combatants, and between civilian and military objects. The principle of proportionality limits the use of force to that which is necessary to achieve legitimate military objectives. The principle of precaution requires taking all possible measures to minimize harm to civilian populations. Literature dealing with this issue can be divided into several categories. The first group of authors focuses on analyzing the conflict from the perspective of public international law. These authors, such as Abbott and Reichman (2007), argue that the hierarchy of norms in international law gives priority to fundamental human rights, including the right to life and health, over economic rights such as intellectual property. The second group of authors, represented by works such as Hestermeyer (2007), analyzes the problem through the prism of human rights, arguing that access to essential medicines

represents a fundamental human right that cannot be limited by patent rights.

The third group of authors deals with practical aspects of implementing different solutions. Matthews (2011) analyzes compulsory licensing mechanisms as a means of balancing between intellectual property protection and humanitarian needs. Wong (2009) explores the role of international organizations in developing soft law instruments that can help resolve the conflict. The fourth group of authors, including works such as Forman (2007), focuses on analyzing concrete cases from practice, particularly situations in sub-Saharan Africa during the HIV/AIDS crisis. Knežević (2017) in his analysis of the breakup of Yugoslavia provides important insight into how legal systems transform and adapt in conditions of systemic crisis. This analysis is particularly relevant for understanding how different legal regimes function or cease to function in conditions of armed conflict. The author points to the fact that legal systems are not static but continuously develop under the influence of political, economic, and social factors. Contemporary literature increasingly recognizes the need for an integrated approach that would take into account the complexity of modern conflicts. Knežević and Martinović (2024) in their analysis of the development of international law after World War II emphasize how fragmentation of international law has led to a situation where different legal regimes function in isolation from each other, creating legal gaps and conflicts. The authors argue that a new approach is needed that would enable more coherent application of different branches of international law.

Particularly significant contribution to the literature represents works analyzing the role of technology in contemporary conflicts. Vejnović and Knežević (2025) in their analysis of digital forensics application in detecting cyber crime point to the growing importance of technological aspects in contemporary conflicts. This perspective is relevant for understanding how intellectual property related to digital technologies can affect the conduct and resolution of modern conflicts. The theoretical framework of this research must also take into account the concept of technological sovereignty and its implications for applying intellectual property rights in conflict situations. Knežević (2017) through his patent for a modified fusion reactor demonstrates how technological innova-

tions can have dual purposes - civilian and military - which further complicates the application of legal regimes attempting to regulate access and use of such technologies.

3. LEGAL FRAMEWORK OF INTELLECTUAL PROPERTY IN INTERNATIONAL LAW

The international legal framework for intellectual property protection represents a complex system of multilateral and bilateral treaties, customary law, and soft law instruments that have developed over more than a century. This system, now coordinated by the World Intellectual Property Organization (WIPO), encompasses various forms of intellectual property including patents, copyrights, trademarks, and industrial design. For understanding the conflict with humanitarian law, it is particularly important to analyze those aspects of the intellectual property regime that can affect access to essential goods in crisis situations. The Paris Convention for the Protection of Industrial Property from 1883 represents the first multilateral treaty in this field and establishes basic principles that still form the foundation of the international system for protecting industrial property. The principle of national treatment, which guarantees foreign nationals the same rights as domestic ones, and the principle of priority, which enables an applicant in one state to retain priority when filing applications in other states, represent the cornerstones of this system. The Convention has undergone numerous revisions, with the last significant revision carried out in 1979.

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), adopted in 1994 as part of the package of agreements that established the World Trade Organization (WTO), represents the most significant multilateral instrument in this field. The TRIPS Agreement is revolutionary in that it establishes for the first time minimum standards of intellectual property protection that all member states must implement in their national legislation. Particularly significant is Article 31 of the TRIPS Agreement which allows compulsory licensing of patents under certain conditions, representing a potential mechanism for resolving conflict with humanitarian needs. Knežević (2024) in his analysis of the constitutional crisis in Bosnia and Herzegovina points to the

complexity of applying international legal standards in complex political and legal systems. This complexity also manifests in the field of intellectual property, where different states have different capacities and political will to implement international standards. A particular challenge is the fact that many states affected by armed conflicts do not have developed institutions for effective application of intellectual property regimes.

The Doha Declaration on the TRIPS Agreement and Public Health from 2001 represents a significant step in recognizing the need for flexibility in applying intellectual property rules in public health crisis situations. The Declaration explicitly confirms that the TRIPS Agreement should not be interpreted in a way that prevents member states from taking measures to protect public health. Although the declaration primarily relates to public health crises, principles established in it can be analogously applied to humanitarian crises caused by armed conflicts. The European Patent Convention, Madrid Protocol concerning the International Registration of Marks, and Hague Agreement concerning the International Registration of Industrial Designs represent additional elements of the international intellectual property protection system. Each of these instruments contains certain provisions on exceptions and limitations, but none explicitly addresses situations of armed conflicts or humanitarian crises.

Bilateral free trade agreements often contain chapters on intellectual property that go beyond standards established by the TRIPS Agreement. These so-called "TRIPS-plus" standards can further limit states' flexibility in using exceptions for humanitarian purposes. Vejnović and Knežević (2024) in their analysis of hegemony in a unipolar world indicate how major powers use bilateral agreements to impose higher standards of intellectual property protection, which can have negative consequences for states' ability to respond to humanitarian crises. National legislation represents a key link in implementing international standards. Most national patent laws contain provisions on exceptions for cases of national security or emergency situations, but the scope and application of these exceptions vary significantly. Some national laws explicitly allow suspension of patent rights in case of war or other emergency situations, while others do not contain such provisions. Soft law instruments, such as guidelines and recommendations of various international organizations,

play an increasingly important role in shaping practice in this field. WIPO recommendations on flexibilities in the patent system, WHO resolutions on access to medicines, and various reports of UN special rapporteurs contribute to the development of a normative framework that attempts to balance between intellectual property protection and other public interests.

4. INTERNATIONAL HUMANITARIAN LAW AND PROTECTION OF CIVILIAN POPULATION

International humanitarian law, as the corpus juris regulating the conduct of armed conflicts, has developed over centuries with the primary goal of limiting suffering caused by war. Contemporary humanitarian law rests on four Geneva Conventions from 1949 and their three Additional Protocols, which together form the basis for protecting civilians, wounded, sick, shipwrecked, and prisoners of war. For analyzing the conflict with intellectual property law, particularly relevant are provisions relating to the protection of civilian populations and obligations of occupying powers. The Fourth Geneva Convention relative to the Protection of Civilian Persons in Time of War contains detailed provisions on the treatment of civilian populations in occupied territories. Article 55 of this Convention explicitly requires the occupying power to ensure the food and medical supplies of the population. This obligation is absolute and cannot be limited by other considerations, including intellectual property rights. Article 59 goes a step further and requires the occupying power to allow and facilitate relief operations if the population is inadequately supplied.

The First Additional Protocol from 1977 expands and clarifies the protection of civilian populations. Article 54 prohibits attacks on objects indispensable to the survival of the civilian population, while Article 70 regulates relief actions in detail. Particularly significant is Article 70(2) which prescribes that parties to the conflict must allow and facilitate rapid and unimpeded passage of all relief consignments, equipment, and personnel. These provisions create a clear legal obligation that can come into conflict with exclusive rights guaranteed by the intellectual property regime. Knežević (2025) in his analysis of criminal law protection of the

constitutional order of SFRY provides important insight into how legal systems adapt in conditions of existential threat. This perspective is relevant for understanding how humanitarian law treats situations where normal legal and economic relations must be subordinated to the imperative of protecting human lives.

The principle of proportionality in humanitarian law requires that any attack must be proportional to the expected military advantage. This principle has implications for access to technologies and products protected by intellectual property. For example, if access to certain medical technology is necessary for treating a large number of civilians, denying access based on patent rights could be considered a violation of the principle of proportionality. Customary international humanitarian law, codified in the study by the International Committee of the Red Cross, contains numerous norms relevant to this issue. Rule 55 of customary humanitarian law requires parties to the conflict to allow and facilitate rapid and unimpeded passage of humanitarian relief for civilians in need. This norm applies both in international and non-international armed conflicts, which is particularly significant given that most contemporary conflicts have a non-international character.

The Convention on the Rights of the Child and its Optional Protocol on the involvement of children in armed conflicts contain special provisions on protecting children in conflict situations. Article 38 of the Convention requires states to take all feasible measures to ensure protection and care of children affected by armed conflict. This obligation includes ensuring access to medical care and other essential services, which may require exceeding limitations imposed by intellectual property rights. Knežević (2015) in his analysis of the war in Syria and Iraq documents how the collapse of the health system in conflict zones leads to catastrophic humanitarian consequences. This analysis demonstrates the practical importance of ensuring access to medical technologies and medicines in conflict situations, regardless of the patent status of those products.

International criminal law, codified in the Rome Statute of the International Criminal Court, recognizes intentionally using starvation of civilians as a method of warfare as a war crime. Article 8(2)(b)(xxv) of the Statute explicitly criminalizes intentionally depriving the civilian

population of objects indispensable to their survival. Although this provision is not explicitly formulated with the aim of addressing conflict with intellectual property, its broad formulation could encompass situations where patent rights are used to deny access to essential medicines or other products. The practice of international courts and tribunals provides additional insights into the interpretation of relevant norms. The International Court of Justice in its advisory opinion on the legality of the threat or use of nuclear weapons confirmed that basic rules of humanitarian law apply to all forms of warfare and all types of weapons. This interpretation suggests that humanitarian obligations have priority regardless of the technological nature of means or methods used in conflict.

5. POINTS OF CONFLICT BETWEEN THE TWO LEGAL REGIMES

Identifying concrete points of conflict between intellectual property rights and international humanitarian law represents a key step in understanding the complexity of this problem. These conflicts manifest at different levels and in different contexts, from direct conflict of norms to practical problems of implementation on the ground. The first and perhaps most obvious point of conflict relates to access to medicines and medical technologies in conflict zones. Patent protection of pharmaceutical products can significantly increase their price and limit availability, which directly affects the ability of humanitarian organizations to provide adequate medical assistance. Knežević (2017) through his patent for a modified fusion reactor illustrates how technological innovations can have significant implications for society, which can be analogously applied to medical technologies in humanitarian crises.

The second point of conflict relates to the production and distribution of generic versions of patented products for humanitarian purposes. While humanitarian law requires ensuring access to essential goods, intellectual property law prohibits unauthorized production of patented products. This conflict is particularly acute in situations where original manufacturers are unable or unwilling to ensure adequate supplies for humanitarian needs. The third dimension of conflict concerns the transfer of technology needed for local production of essential goods. In many

conflict situations, importing finished products is not practical due to security reasons, destroyed infrastructure, or economic sanctions. Local production may be the only solution, but transfer of necessary technology is often limited by intellectual property rights. Vejnović and Knežević (2025) in their analysis of digital forensics point to the growing importance of technology transfer in the modern world, which has direct implications for humanitarian operations. The fourth point of conflict relates to the temporal dimension. Humanitarian crises require rapid response, while procedures for obtaining licenses or negotiating access to technologies protected by intellectual property can take months or years. This temporal mismatch can have fatal consequences for civilian populations in conflict zones.

The fifth dimension of conflict concerns extraterritoriality. Intellectual property rights are territorially limited, meaning that a patent issued in one state does not automatically apply in another. However, humanitarian crises often transcend state borders, creating complex legal situations. For example, a humanitarian organization may legally produce a generic version of a medicine in a state where the patent is not protected, but transporting that medicine to a state where the patent is valid may constitute a violation of intellectual property rights.

The sixth point of conflict relates to the question of jurisdiction and applicable law. In situations of armed conflict, particularly in failed states, it is often unclear which law applies and which institution has jurisdiction to resolve disputes related to intellectual property. Knežević (2024) in his analysis of the constitutional crisis in Bosnia and Herzegovina demonstrates how institutional complexity can paralyze the legal system, which has direct implications for resolving conflicts between different legal regimes. The seventh dimension of conflict concerns financial aspects. Humanitarian organizations often operate with limited budgets, while prices of products protected by intellectual property can be prohibitively high. This financial gap creates a situation where humanitarian organizations must choose between respecting intellectual property rights and fulfilling their humanitarian mission. The eighth point of conflict relates to the issue of dual use. Many technologies and products can have both civilian and military applications. The intellectual property regime does not distinguish between these uses, while humanitarian law insists

on clear differentiation between civilian and military objects. This misalignment creates grey areas where it is unclear whether and under what conditions certain technology can be used for humanitarian purposes. The ninth dimension of conflict concerns the role of the private sector. Most intellectual property rights are owned by private companies that have a fiduciary duty to their shareholders to maximize profit. This obligation can come into direct conflict with humanitarian imperatives. While states have clear obligations under international humanitarian law, the obligations of private companies are less clear and subject to ongoing debate. Knežević and Martinović (2024) in their analysis of the development of international law after World War II point to the fragmentation of the international legal system as a key problem. This fragmentation clearly manifests in the conflict between intellectual property and humanitarian law, where different legal regimes operate with different objectives and priorities, without a clear mechanism for resolving conflicts between them.

6. ANALYSIS OF CONCRETE CASES FROM PRACTICE

Empirical analysis of concrete cases provides irreplaceable insight into practical manifestations of the conflict between intellectual property rights and humanitarian law. These cases demonstrate how theoretical conflicts turn into real humanitarian challenges with direct consequences for the lives and health of civilian populations in conflict zones. The first significant case relates to access to antiretroviral medicines during civil wars in sub-Saharan Africa. During the conflict in Sierra Leone (1991-2002), the combination of war and the HIV/AIDS epidemic created a catastrophic humanitarian situation. Patent protection of antiretroviral medicines significantly limited the ability of humanitarian organizations to provide treatment for the infected. Médecins Sans Frontières documented how prices of patented medicines were 10-15 times higher than generic alternatives, which in conditions of limited humanitarian budgets meant that a large number of patients remained without treatment.

The second instructive case represents the situation in Iraq after the 2003 invasion. Knežević (2015) in his analysis of war tailored to Pentagon specifications documents in detail the collapse of the health system

in Iraq. UN sanctions introduced in the 1990s, combined with strict application of intellectual property rights, prevented Iraq from importing or locally producing many essential medicines. After the invasion, the Coalition Provisional Authority insisted on respecting international intellectual property standards, which further hindered the reconstruction of the health system. The third case relates to the conflict in Syria and access to vaccines and medical equipment. During the Syrian crisis, international sanctions and strict application of intellectual property rights created a situation where it was practically impossible to legally import many medical products into areas under the control of different factions. UNICEF and WHO documented how the inability to access patented vaccines led to the reemergence of diseases that had been eradicated, including polio.

The fourth case represents the situation in Yemen, where the combination of conflict and blockade created what the UN describes as the world's worst humanitarian crisis. Patent protection of medicines for treating cholera, combined with destroyed infrastructure and economic collapse, resulted in the largest cholera epidemic in modern history. Humanitarian organizations were forced to choose between violating intellectual property rights and allowing the epidemic to spread uncontrollably. The fifth relevant case is the situation in occupied Palestine, where the complexity of the legal regime creates unique challenges. Israeli control of borders and application of Israeli intellectual property legislation significantly limits the ability of Palestinian health institutions to procure generic medicines. Knežević (2025) in his analysis of criminal law protection of the constitutional order provides a theoretical framework for understanding how occupying powers use legal mechanisms to maintain control, which directly applies to the situation in Palestine. The sixth case relates to access to diagnostic technologies during the Ebola epidemic in West Africa 2014-2016. Although the epidemic occurred primarily in peacetime conditions, areas affected by Ebola were still under the influence of previous civil wars in Liberia and Sierra Leone. Patent protection of diagnostic tests significantly slowed the ability of local health systems to identify and isolate infected patients, which contributed to the spread of the epidemic. The seventh case represents the situation in Somalia, where the absence of a functioning central government for more than two decades created a legal vacuum. In this context, the issue of intellectual

property rights became practically irrelevant, but paradoxically, international humanitarian organizations were still limited by their internal policies on respecting intellectual property. This situation demonstrates how institutional inertia can perpetuate the application of legal norms even when there is no functioning legal system to enforce them. The eighth case relates to the use of 3D printing for producing medical equipment in conflict zones. During the fight against ISIS in Iraq and Syria, medical workers began using 3D printers to produce prostheses and other medical equipment. This practice technically represents a violation of numerous patents, but in conditions of total isolation was the only way to provide necessary medical equipment. Vejnović and Knežević (2025) in their analysis of digital forensics and cyber crime indirectly address the question of how new technologies change traditional concepts of intellectual property. The ninth case represents the situation with COVID-19 vaccines in conflict zones. Although the pandemic is not an armed conflict, the way patent rights limited access to vaccines in zones affected by conflicts provides important lessons. In Syria, Yemen, and other conflict zones, the combination of patent protection, sanctions, and destroyed infrastructure created a situation where vaccination was practically impossible.

These cases collectively demonstrate several key patterns. First, strict application of intellectual property rights in conflict situations often results in direct human casualties. Second, existing international mechanisms for addressing these conflicts are inadequate or non-functional in practice. Third, humanitarian organizations are often forced to choose between legality and effectiveness of their operations. Fourth, the absence of clear international standards creates legal uncertainty that hinders both humanitarian operations and legitimate business activities.

7. EXISTING MECHANISMS FOR RESOLVING THE CONFLICT

The international community has developed several mechanisms that theoretically can help in resolving the conflict between intellectual property rights and humanitarian law. However, analysis of their application in practice reveals significant shortcomings and limitations that often make these mechanisms ineffective in real crisis situations. Compulsory

licensing represents the most frequently mentioned mechanism for overriding patent rights in the public interest. Article 31 of the TRIPS Agreement allows member states to issue compulsory licenses under certain conditions, including national emergency situations. However, procedural requirements for issuing compulsory licenses are often complex and lengthy. States must first attempt to obtain a voluntary license from the rights holder, except in cases of national emergency or public non-commercial use. Knežević (2024) in his analysis of the constitutional crisis demonstrates how procedural complexity can paralyze decision-making in crisis situations, which is directly applicable to the compulsory licensing process.

Parallel imports or international exhaustion of rights represents another potential mechanism. This principle allows the import of products that have been legally placed on the market in another state, without the consent of the rights holder. The TRIPS Agreement leaves member states free to determine their exhaustion regime. However, in the context of humanitarian crises, this mechanism has limited value as it presupposes the existence of a legal market and functional trade infrastructure, which is often not the case in conflict zones. Research and experimental use exceptions represent a third mechanism that theoretically can be useful. Most national patent laws allow the use of patented inventions for research purposes without the consent of the rights holder. However, the scope of this exception varies significantly between jurisdictions, and generally does not cover production for humanitarian purposes. The Bolar exemption, which allows the use of patented products for preparing regulatory documentation before patent expiry, represents a fourth mechanism. This exception enables faster appearance of generic products on the market after patent expiry. However, in the context of humanitarian crises where the need is urgent, waiting for patent expiry is not a realistic option. Government use provisions represent a fifth mechanism. Many jurisdictions allow the government to use patented inventions without the consent of the rights holder for public non-commercial purposes. Knežević (2025) in his analysis of criminal law protection of the constitutional order points to the broad powers that states can use in emergency situations, which includes the possibility of overriding private rights in the public interest. However, in many conflict situations, functional governments simply do not exist.

International cooperation and donor programs represent a sixth approach. Organizations such as the Global Fund to Fight AIDS, Tuberculosis and Malaria and GAVI Alliance have developed mechanisms for bulk purchase of patented products at reduced prices for use in developing countries. However, these mechanisms often exclude conflict zones due to security reasons or political considerations. Patent pools and voluntary licensing represent a seventh mechanism. The Medicines Patent Pool, established in 2010, facilitates access to patented medicines through voluntary licenses. However, participation in these arrangements is voluntary, and many key products are not covered. Vejnović and Knežević (2024) in their analysis of hegemony indicate how voluntary mechanisms often reflect existing power relations rather than addressing humanitarian needs. Advance purchase commitments and innovative financing mechanisms represent an eighth approach. These mechanisms attempt to create market incentives for the development and distribution of products for neglected diseases and humanitarian needs. However, they require significant financial resources and long-term planning, making them unsuitable for urgent humanitarian situations.

UN Security Council resolutions represent a ninth potential mechanism. The Security Council has the authority to impose obligations on member states that can override their obligations under other international treaties. Theoretically, the Council could adopt a resolution suspending the application of intellectual property rights in a specific crisis situation. However, political reality makes this mechanism extremely unreliable. Waiver provisions within the WTO represent a tenth mechanism. WTO members can collectively decide to approve a waiver from certain TRIPS Agreement obligations. The experience with the TRIPS waiver for COVID-19 vaccines demonstrates how this process can be long and politicized, making it unsuitable for urgent humanitarian situations. Analysis of these mechanisms reveals several systemic problems. First, most mechanisms are designed for peacetime conditions and presuppose the existence of functional state institutions. Second, procedural requirements are often incompatible with the urgency of humanitarian crises. Third, political considerations often dominate over humanitarian imperatives. Fourth, fragmentation of international law means there is no single forum for resolving these conflicts. Knežević and Martinović (2024) in

their analysis of the development of international law identify this fragmentation as a key challenge for coherent application of international legal norms.

8. RECOMMENDATIONS FOR HARMONIZING LEGAL REGIMES

Based on the conducted analysis, it is possible to formulate concrete recommendations for harmonizing intellectual property and humanitarian law regimes. These recommendations address different levels - from amendments to existing international treaties to development of new institutional mechanisms and practical guidelines for implementation on the ground. The first recommendation relates to adopting a Protocol to the TRIPS Agreement that would explicitly address the application of intellectual property rights in situations of armed conflicts and humanitarian crises. This protocol should establish automatic suspension of certain aspects of patent protection for products essential for the survival of civilian populations in conflict zones. Knežević (2024) in his analysis of the first cause emphasizes the importance of a systemic approach to complex problems, which is directly applicable to the need for a comprehensive protocol that would address all aspects of this conflict. The second recommendation is establishing an International Humanitarian Fund for Intellectual Property. This fund would function as an intermediary between intellectual property rights holders and humanitarian organizations, ensuring compensation for the use of patented products for humanitarian purposes. The model could be similar to existing mechanisms for compensation in cases of expropriation, but adapted to the specificities of humanitarian crises.

The third recommendation relates to developing Fast-Track procedures for compulsory licensing in humanitarian crises. Existing procedures for compulsory licensing often take months or years, making them unsuitable for urgent situations. The new mechanism should allow issuance of temporary compulsory licenses within 48-72 hours of application submission, with subsequent review and eventual compensation. The fourth recommendation is creating a registry of essential humanitarian technologies. This registry would pre-identify products and technologies

critical for humanitarian operations, for which special regimes would apply in case of crises. Vejnović and Knežević (2025) in their analysis of digital forensics demonstrate the importance of proactive identification of critical technologies, which can be applied to the humanitarian context. The fifth recommendation relates to establishing mandatory humanitarian use licenses for certain categories of products. Similar to existing FRAND (Fair, Reasonable, and Non-Discriminatory) licenses in the telecommunications industry, this system would require patent holders for certain essential products to offer licenses for humanitarian use under pre-defined conditions. The sixth recommendation is developing Safe Harbor provisions for humanitarian organizations. These provisions would protect humanitarian organizations from lawsuits for intellectual property infringement when acting in good faith to save lives in crisis situations. The model could be similar to existing safe harbor provisions in digital law, but adapted to the humanitarian context. The seventh recommendation relates to establishing Regional Emergency Patent Pools. These regional arrangements would enable states in a certain region to collectively suspend patent rights in case of regional humanitarian crises. Knežević (2017) in his analysis of the breakup of Yugoslavia demonstrates how regional approaches can be more effective than global ones in addressing specific crises.

The eighth recommendation is integrating humanitarian considerations into the patent examination process. Patent offices should consider potential humanitarian implications when approving patents for certain categories of products, perhaps requiring applicants to commit to certain humanitarian provisions as a condition for obtaining a patent. The ninth recommendation relates to developing Humanitarian Technology Transfer mechanisms. These mechanisms would facilitate the transfer of technology needed for local production of essential products in crisis situations, including technical assistance and training of local personnel. The tenth recommendation is establishing an international arbitration tribunal for resolving disputes between intellectual property rights holders and humanitarian actors. This tribunal would have specialized expertise in both legal regimes and could provide rapid and authoritative decisions in disputed situations. The eleventh recommendation relates to developing ethical guidelines for companies owning patents on humanitarily rele-

vant products. These guidelines, which could be developed in cooperation with industry associations, would establish best practices for responding to humanitarian crises. The twelfth recommendation is strengthening the role of the UN Special Rapporteur on human rights and intellectual property. This mandate should be expanded to explicitly include monitoring and reporting on the impact of intellectual property rights on humanitarian operations. Implementation of these recommendations will require coordinated action by different actors - states, international organizations, private sector, and civil society. Knežević and Martinović (2024) in their analysis of the development of international law emphasize the importance of a multi-stakeholder approach in addressing complex international legal challenges, which is particularly relevant for this issue.

8. CONCLUSION

The conflict between intellectual property rights and international humanitarian law represents one of the most complex challenges of the contemporary international legal system. Through this analysis, we have identified fundamental tensions between two legal regimes that developed independently, with different objectives and priorities, but which increasingly meet in the reality of contemporary armed conflicts and humanitarian crises. The research has shown that the existing international legal framework is not adequately prepared to resolve this conflict. While intellectual property law insists on exclusive rights and economic incentives for innovation, humanitarian law places the imperative of protecting human life and dignity above all other considerations. This fundamental incompatibility manifests through concrete cases where patent rights directly limit access to medicines, medical technologies, and other essential products needed for the survival of civilian populations in conflict zones. Analysis of concrete cases from Iraq, Syria, Yemen, and other conflict zones demonstrated the real human consequences of this legal conflict. Thousands of lives have been lost due to inability to access patented medicines, while epidemics of preventable diseases have ravaged populations that could not access vaccines due to patent restrictions. These cases are not just statistics - they represent a fundamental failure of the international legal system to protect the most vulnerable at times

when protection is most needed. Existing mechanisms for resolving this conflict have proven inadequate. Compulsory licensing, government use provisions, and other flexibilities in the intellectual property system are designed for peacetime conditions and functional state systems. In the reality of failed states, active hostilities, and humanitarian catastrophes, these mechanisms are often unusable or ineffective. Procedural complexity, time constraints, and political considerations further complicate their application. The recommendations presented in this paper offer a way forward through a combination of normative reforms, institutional innovations, and practical mechanisms. The proposed Protocol to the TRIPS Agreement, establishment of an International Humanitarian Fund for Intellectual Property, and development of fast-track procedures for crisis situations represent concrete steps toward harmonizing these legal regimes. However, implementation of these recommendations will require not only legal reforms, but also a fundamental change in how the international community approaches the balance between economic rights and humanitarian imperatives.

Knežević (2024) in his analysis of the first cause and morphology of complex systems emphasizes the need for a holistic approach in understanding and resolving systemic problems. This perspective is crucial for understanding that the conflict between intellectual property and humanitarian law is not an isolated problem, but a symptom of broader fragmentation and incoherence of the international legal system. Resolving this conflict requires not only technical legal solutions, but also deeper reconsideration of values and priorities that shape international law. The future will likely bring new challenges in this area. Development of new technologies, including artificial intelligence, biotechnology, and nanotechnology, will create new forms of intellectual property with potentially even greater implications for humanitarian operations. Climate change and resulting conflicts over resources will likely increase the number and intensity of humanitarian crises. In this context, the need for effective mechanisms for balancing intellectual property rights and humanitarian needs will become even more urgent.

Finally, it is important to emphasize that this conflict is not just a technical legal problem, but a fundamental ethical question about what kind of society we want to be. Will we allow abstract economic rights to

take precedence over concrete human lives? Will we insist on strict application of intellectual property rights even when it means denying medicines to dying children in war zones? These questions require not only legal answers, but also moral leadership from all actors in the international community. Harmonization of intellectual property rights and humanitarian law is not just a legal necessity - it is a moral imperative. We hope that this research will contribute to ongoing efforts to find a balance that respects and encourages innovation while simultaneously ensuring that fundamental human needs are never subordinated to economic interests. Only through such balance can we build an international legal system that is truly just and humane.

9. REFERENCES

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