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THE SCOPE OF MANUFACTURER CIVIL LIABILITY EXEMPTION DUE TO RISKS OF SCIENTIFIC ADVANCEMENT

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ABSTRACT

Manufacturers may, under certain conditions, avoid civil liability by invoking the risks associated with scientific advancement as grounds for exemption. This defense requires proof that at the time the product was introduced into the market, prevailing scientific knowledge did not permit the identification of the defect. Originally introduced through the 1985 European Directive and later incorporated into French legislation via Law No. 98-389 on defective products (subsequently amended by Order No. 2016-131 concerning the reform of contract law, general regime, and proof of obligations), this provision has not yet been adopted in Algerian civil law. Even after the 2005 amendment to Algeria's civil code, which introduced Article 140 bis on manufacturer liability, the Algerian legal framework, including its consumer protection laws, makes only implicit references to this exemption. Accordingly, The Algerian legislator should determine whether scientific advancements justify exemption, Accordingly, the Algerian legislator should adopt a stance on the risks posed by scientific advancements and the extent to which they can be considered grounds for exemption from liability. This is in line with modern

legislations that substantiate this defense, as well as French jurisprudence, which has emphasized the necessity of relying on the risks of scientific advancement to absolve the producer from liability. This is based on the premise that disregarding this defense would hinder development and progress, ultimately obstructing industry, given the relativity and continuous evolution of scientific knowledge. To address these various risks, a comprehensive compensation system supported by insurance companies should be established.

INTRODUCTION

Technological advancements have catalyzed substantial transformations across industrial sectors, leading to increased consumer reliance on a wide range of products. While these products aim to enhance the quality of life, they also carry potential risks—both apparent and latent—that can directly endanger consumers' health and financial stability. In response, legislators have enacted civil liability frameworks aimed at balancing the interests of manufacturers and consumers. However, as these liability frameworks have occasionally proven insufficient in providing robust protection to affected parties, supplementary civil liability principles have emerged. These principles, tailored specifically for defective products, strive to ensure adequate recourse for affected consumers, with compensation remaining a central objective.

Despite these evolving frameworks, manufacturers still retain the right to mitigate liability through established defenses under general principles of law. Among these is the scientific development risk defense, which allows manufacturers to argue that, at the time of distribution, scientific and technical knowledge did not allow for the identification of product defects. This defense has become increasingly significant as technological advancements integrate scientific knowledge into production processes across diverse industries. While these advancements have undeniably enhanced convenience and efficiency, they have also introduced unforeseen risks that manufacturers cannot entirely predict, even when fulfilling all legal obligations. Consequently, legal scholars and courts have recognized the need to institutionalize this defense within legislative frameworks, thereby acknowledging the limitations posed by scientific unpredictability.

This study seeks to examine an evolving aspect of civil liability—namely, the exemptions and limitations on liability imposed due to the uncontrollable risks arising from continuous scientific progress. The central research question investigates the extent to which manufacturers can invoke scientific development risks to negate civil liability.

The methodological approach of this study is analytical, focusing on an examination of relevant legal texts and a comparative analysis of French and Algerian law, recognizing that many of the statutes governing this type of liability have origins in French legal precedents.

1. THE CONCEPT OF SCIENTIFIC DEVELOPMENT RISKS

This section elucidates the concept of scientific development risks, structuring the analysis into two parts: first, a definitional framework for scientific development risks, and second, an exploration of relevant legislative perspectives.

1.1. Definition of Scientific Development Risks

The invocation of scientific development risks as a defense to negate civil liability is a relatively recent defense within product liability law. This defense is predicated on the manufacturer's inability to foresee certain defects due to the prevailing limitations of scientific and technical knowledge at the time of the product's circulation. To delineate

this concept, this part is divided into two subsections: the doctrinal interpretation of scientific development risks and the legal definition.

1.1.1. Jurisprudential Definition of Scientific Development Risks

In legal scholarship, multiple terms have been employed to characterize this defense, including "developmental risks," "technological advancement risks," and "scientific development risks".[1] Hassan Abdelrahman Quddous conceptualizes these risks as stemming from a deficiency in scientific and technical knowledge that precludes the manufacturer from identifying a product's latent defects at the time of distribution, thereby obstructing an anticipatory understanding of its inherent risks.[2] In contrast, Ph. Le Tourneau critiques the nomenclature "development risks," arguing that it is not the risk itself that constitutes a defense but rather the latent defect undetectable at the point of market introduction.[3]

Further academic definitions regard scientific development risks as those potential hazards that remain indiscernible until after the product has been commercialized—a situation exacerbated by the accelerated evolution of scientific and technological knowledge. This rapid innovation frequently results in products or treatments with delayed adverse effects that only become evident in subsequent stages of use.[4] Notably, "scientific development risks" do not imply the inherent hazards of innovation per se; rather, they refer to the subsequent discovery of risks through advancements in scientific understanding.[5]

1.1.2. Legal definition

The legal foundation of scientific development risks as an exculpatory defense first emerged in the 1985 European Product Liability Directive, where Article 7 states that "the producer shall not be liable if it proves that the state of scientific and technical knowledge at the time the product was put into circulation was insufficient to detect the defect". French civil law enshrines this defense under Article 1245-10 of the Civil Code, which specifies that "the producer is strictly liable unless it proves... that the scientific and technical knowledge available at the time of marketing was inadequate to reveal the defect".

Several legislative initiatives have subsequently institutionalized this defense. For example, J. Ghestin's 1988 proposal and the 1993 CATALA project supported this exculpatory principle, highlighting the necessity for a post-market traceability obligation, requiring manufacturers to monitor potential latent defects and notify consumers should such risks be identified.

The European Court of Justice (ECJ) further refined the scope of this definition in a 1997 ruling, stipulating that scientific development risks should be assessed based on global scientific and technical knowledge rather than being confined to national or sector-specific standards. German jurisprudence also addresses scientific development risks, particularly in the context of pharmaceuticals, under the Pharmaceutical Products Act of August 24, 1976, mandating safeguards against undiscovered adverse effects in medicinal products.

The concept of "scientific development risks" holds particular pertinence in the pharmaceutical sector, where medicinal products—despite their regulatory compliance and adherence to pharmacovigilance requirements—may later be discovered to have unforeseen side effects. The thalidomide tragedy is a paradigmatic case: marketed initially by a German pharmaceutical company as a safe anti-nausea drug for pregnant women, thalidomide was later found to cause severe congenital disabilities. Although initially compliant with scientific safety standards, its latent risks only became apparent through post-market surveillance and continued scientific evaluation. This incident led to the drug's withdrawal from the market and

1 Boumediene, F. Z. (2017). Development Risks as a Ground for Exemption from Liability for Defective Products. (Doctoral degree in Law), Algeria. p. 20.

2 Quddous H. A. (2002). The Extent of the Manufacturer's Obligation to Ensure Safety in the Face of Scientific Development Risks, (1st Ed.). Cairo: Dar Al-Nahda Al-Arabiya. p. 11.

3 Le tourneau, Ph. (2000). Liability for Defective Products. *The Weekly Law Journal J.C.P*. 5(2). p. 121.

4 Zoghbi, A. M. (2013). *Scientific Development Risks as a Basis for Exempting Manufacturers from Consumer Damages*, Paper presented at the Study Day on Manufacturer Liability for Defective Products as a Means of Consumer Protection, Faculty of Law and Political Science, Mouloud Mammeri University, Tizi Ouzou-Algeria. p. 179.

5 Abou Akil, A. M., Said, M. (2023). State Liability for Damages Arising from Scientific Development Risks (COVID-19 Vaccines as a Case Study). *Journal of Jurisprudential and Legal Research of King Abdulaziz University*, 35(40). p. 754.

prompted amendments in German law, excluding pharmaceutical products from the scientific development risk exemption under the Pharmaceutical Products Act of August 24, 1976.

1.2. Legislative Stances on Scientific Development Risks

The debate surrounding the inclusion of scientific development risks as a defense within the framework of the European Directive has been extensive, with Germany leading in its adoption and other legal systems subsequently following suit. This section provides a comparative analysis of the French and Algerian legislative responses to scientific development risks.

1.2.1. The French Legislative Stance

France initially hesitated to recognize scientific development risks as grounds for exemption from manufacturer liability, which delayed its incorporation of the European Directive until 1998[6]. The French Parliament expressed reservations, particularly after the Bovine Spongiform Encephalopathy (BSE) crisis, or "mad cow disease," raised public concerns about product safety. Nevertheless, economic and scientific pressures, combined with significant lobbying from insurance companies, ultimately swayed the government to adopt this exemption. As a result, Article 1386-11-4[7] of the French Civil Code now provides manufacturers the opportunity to evade liability by demonstrating that, at the time of the product's release, the state of scientific and technical knowledge did not allow for defect detection. This provision, however, has not been without controversy, as some critics argue it undermines the objective nature of product liability.[8]

Article 1386-11-4 specifically stipulates: *"The producer shall be liable by law unless it proves that the state of scientific and technical knowledge at the time of the product's release did not permit the discovery of the defect"*. This provision closely mirrors Article 7 of the European Directive. Notably, this defense cannot be invoked in cases involving damage to human organs or products derived from human tissue, as clarified by Article 1386-12,[9] a distinction that will be discussed in greater detail in Section Two.

Through this legislative move, the French legislator introduces an innovative foreign cause for liability exemption, diverging from traditional conceptions of exonerative causes. This exemption is accessible to any "producer" as defined in Article 1386-6 of the French Civil Code, encompassing manufacturers of final products, component manufacturers, and other professionals in the supply chain. Conversely, entities outside the scope of "producers," as specified in Article 1386-3—such as real estate developers and sellers of construction real Estate, cannot invoke scientific development risks as a defense, as their liability is governed by Articles 1792-6 and 1386-1.

Under Article 1386-12-2 of the French Civil Code.[10] manufacturers are precluded from using scientific development risks as a defense if they fail to notify consumers, by all possible means, about latent product risks once advancements in technical knowledge enable the identification of such risks or necessitate a product recall. Additionally, Article 1386-12-1[11] mandates that the defense is void if the manufacturer has not taken sufficient measures within ten years of the product's release to mitigate potential adverse effects.

These provisions impose an obligation of traceability on manufacturers, requiring continuous monitoring of scientific developments relevant to

6 Boulenouar, A. (2018). Development Risks as Grounds for Exemption from Liability for Defective Products. *Al-Manar Journal for Legal and Political Research and Studies*, 2(2), Algeria. p. 322.

7 Article 1386-11, para. 4, of the French Civil Code states: "The state of scientific and technical knowledge at the time the product was put into circulation did not allow for the detection of the defect".

8 Flour J., Jean-Luc A. (1999). Obligations: The Legal Fact. Paris: Armand Colin. p. 284.

9 Article 1386-12, as amended by Article 29 of Law No. 2004-1343 of December 9, 2004, J. O. R. F., December 10, 2004, states: "The producer cannot invoke the exemption cause provided in paragraph 4 of Article 1386-11 when the damage is caused by an element of the human body or by-products derived from it", further modified by Article 1245-11 of Ordinance No. 2016-131.

10 In 2004, the legislator repealed para. 2 of Article 1386-12 following France's condemnation by the European Court of Justice in 2002. This was enacted through Law No. 2004-1343 of December 9, 2004, which amended and supplemented Law No. 98-389 of May 19, 1998.

11 Barakat, K. (2014). *Consumer Safety Protection in a Market Economy: A Comparative Study* (These), Algeria. p. 375.

their products. This obligation reflects the precautionary principle increasingly prevalent in contemporary liability law, underscoring the duty of vigilance and proactive risk management expected of modern manufacturers.[12]

Therefore, the rationale for the French legislator's adoption of this provision and the distinction made between defects that appear subsequently is aimed at clarifying whether scientific development risks constitute valid grounds for liability exemption. However, this approach appears to lack soundness.[13]

1.2.2. The Algerian Legislative Stance

The Algerian legal code does not expressly incorporate the defense of scientific development risks within its civil liability provisions, as amended in 2005. However, the acknowledgment of such risks is implied within certain executive decrees. Specifically, Article 9 of Executive Decree No. 97-37[14] articulates that *"considerations related to technical and/or technological advancement may necessitate adjustments to the list of substances authorized for use in cosmetics manufacturing"*.

This stipulation suggests that Algerian legislation recognizes the impacts of scientific and technological advances on regulatory frameworks, albeit with certain limitations:

- The regulation is confined to the cosmetics and personal hygiene sectors.
- It specifically addresses the list of substances authorized or prohibited in the production of cosmetics, thus not extending as a universal principle applicable across all product categories.[15]

Further legislative nuances regarding the acknowledgment of scientific and technological risks are delineated in Article 6[16] of Executive Decree No. 12-203, dated May 6, 2012, which sets forth safety standards for consumer products. This article mandates that *"the conformity of a good or service with mandatory safety requirements must be assessed against the potential risks to consumer health and safety"*. This assessment must account for:

- Applicable regulations and standards,
- The prevailing state of knowledge and technology.

Additionally, Article 12 of Executive Decree No. 91-04[17] enforces that *"the sale of any materials intended for contact with food is prohibited unless manufactured according to good manufacturing practices"*.

These provisions underscore that the term "good" in the context of manufacturing practices implies a requirement for compliance with sophisticated scientific standards, not merely conventional norms.

2. LIMITATIONS ON LIABILITY EXEMPTION DUE TO SCIENTIFIC DEVELOPMENT RISKS

The adoption of scientific development risks as grounds for negating a manufacturer's civil liability is constrained by key legislative exceptions aimed at protecting consumer welfare, especially with regard to products posing substantial health risks. Germany was a pioneer in articulating these limitations through a landmark ruling by the Federal Court of Justice, most notably encapsulated in the Hühnerpest decision.[18] This section examines these specific exceptions in detail.

12 Bouddali, M. (2005). Liability of the Manufacturer for Defective Products: A Comparative Study (1st Edition). Algeria: Al-Fajr publishing house. pp. 47-48.

13 Saidi, S. (2015). *Civil Liability of the Manufacturer in Algerian and Comparative Law* (These), Algeria. p. 219.

14 Executive Decree No. 97-37. (1997). Establishing the conditions and modalities for the manufacture, packaging, importation, and marketing of cosmetics and personal hygiene products in the national market. Official journal. Sec. 4. <https://www.joradp.dz/FTP/jo-francais/1997/F1997004.PDF> [Lass access: 11/12/2024].

15 Fattak, A. (2007). The Impact of Competition on the Obligation to Ensure Product Safety (1st Edition). Algeria: University Publishing House. pp. 470-471.

16 Executive Decree No. 12-203 (2012). Concerning the regulations applied to product safety. Official journal. Sec. 28. <www.joradp.dz> [Lass access 11/12/2024].

17 Executive Decree No. 91-04 (1991). Concerning materials intended to come into contact with food and substances used to clean these materials. Official journal, Sec. 4. <www.joradp.dz> [Lass access 11/12/2024].

18 Dehrib, I., Naceur, F, (2022). The Impact of Scientific Development Risks on Civil Liability Rules. *Journal of the Voice of Law*, 9(1). p. 934.

2.1. Products Related to the Human Body and Derivatives

Liability exemptions for products associated with the human body or derived from it are strictly defined, reflecting a legal doctrine that mitigates risks associated with these biologically sensitive products. This part first outlines the scope and definition of such products and then analyzes the applicability of the exemptions in this context.

2.1.1. Definition of Human Body Products and Derivatives

The French legislator delineates products related to the human body in Article 793, paragraph one of the French Public Health Code.[19] However, this legislation does not offer an exhaustive list, leading to interpretive challenges regarding which components are included under the definition of human body elements. Under French law, such products encompass all anatomical components, including cells, bones, tissues, and blood.[20]

Derivatives of human body products generally consist of genetically engineered materials produced through biotechnological processes, primarily utilized in pharmaceutical manufacturing. Within the broader legal framework, these derivatives are effectively treated as medications.[21]

2.1.2. Scope of the Exemption

Article 1245-11 of the French Civil Code explicitly provides that *"the producer cannot invoke the exemption provided in clause four of Article 1245-10 when the damage arises from an element of the human body or its derivatives".*[22] This framework was first institutionalized in Germany and reaffirmed in the **Contargan case** (Thalidomide), where a pharmaceutical caused congenital deformities in unborn children. Initially, the teratogenic effects of the drug were not evident, but as adverse effects emerged, the manufacturer was legally compelled to compensate the affected parties.[23]

In addition, Article 16, paragraph one, of the French Civil Code underscores that the human body and its elements are not subject to proprietary rights. This principle was reinforced by the French Court of Cassation in its ruling following the contaminated blood scandal,[24] where it held that an intrinsic defect in blood, even if undetectable, does not justify an exemption from liability.[25]

French legislation makes no distinction between products directly extracted from the human body (e.g., blood, tissues, and cells) and those subject to laboratory modification. Certain biologically derived products, such as insulin,[26] are classified as medications, raising questions regarding whether these products qualify as human body derivatives, thereby excluding manufacturers from invoking scientific development risks as grounds for exemption.

The enactment of the Law of February 26, 2007, and Directive of April 26, 2007, classified various human-derived products as pharmaceuticals under Article 5121-3 of the French Public Health Code. Exceptions were established for organs, tissues, cells, and labile blood products—defined as those with a shelf life not exceeding one year.[27]

In its jurisprudence related to the contaminated blood case, the French Court of Cassation upheld that *"an internal defect in blood, even if undetectable, does not constitute grounds for liability exemption"*. Nevertheless, pharmaceutical producers continue to benefit from liability exemptions. Article 1386-12-1 further specifies that producers cannot absolve themselves of liability by invoking scientific development risks if the damage arises from an element of the human body or its derivatives. This clause applies, for instance, to cases involving the removal and use of human organs by blood transfusion centers, sperm banks, and organ transplant centers, a principle affirmed by the French Court of Cassation on July 9, 1996.

19 Khamis, S., (2015). *Strict Liability of the Manufacturer as a Compensation Mechanism for Victims of Defective Product Accidents: A Comparative Study*, (Master's thesis), Algeria. p. 148.

20 Rahmani, M. M. (2016). Civil Liability for Defective Products, Algeria: Houma Publishing and Distribution. p. 252.

21 Dehrib, I., Naceur, F., ibid. p. 936.

22 Article 1245-11 of the French Civil Code: "The producer cannot invoke the exemption cause provided in paragraph 4 of Article 1245-10 when the damage is caused by an element of the human body or by products derived from it".

23 Bouddali, M., ibid. p. 46.

24 Laroumet, Ch. (2000). The Concept of Development Risk, Paris: Dalloz. p. 1589.

25 Bouddali, M. ibid. pp. 47-48.

26 Tiguerine, S., *Consumer Protection Against the Risks of Scientific and Technological, Development: A Comparative*, (Master's degree), Algeria. p. 102.

27 Khamis, S., ibid. p. 150.

The French Minister of Justice presented a proposal to the National Assembly advocating for the exclusion of pharmaceutical products from the scientific development risk exemption. Although this proposal initially passed in the preliminary voting stage, it was ultimately rejected in the final vote. Nonetheless, the Assembly approved the exclusion of human body components and their derivatives from the scope of the scientific development risk exemption.

2.2. The Obligation of Traceability

The legislation mandates a traceability obligation for manufacturers, compelling them to monitor their products post-distribution when subsequent scientific and technical knowledge uncovers emergent risks that could harm consumers. Failure to fulfill this obligation triggers manufacturer liability. This responsibility, known as *l'obligation de suivi*, is integral to modern product liability law.

2.2.1. Definition of Traceability Obligation

The **French legislator** has established a continuous monitoring duty[28] for manufacturers, which is an extension of the **precautionary principle** articulated in the Algerian law. Specifically, Article 3, paragraph 6 of Algeria's Law No. 06-10[29] states: *"The precautionary principle obliges that the absence of current technologies, due to the state of scientific and technical knowledge, should not delay the implementation of cost-effective, proportionate measures to prevent significant environmental damage".* This principle, although primarily applied in environmental protection contexts in Algeria, has broader implications in product safety under French law.

This traceability obligation compels manufacturers to keep track of their products post-market in light of evolving scientific and technical information that may reveal new risks.

The Algerian legislator provides a comprehensive definition of traceability in Article 5 of Executive Decree No. 12-203,[30] which states: *"Traceability is the process that enables the tracking of a product's movement through production, packaging, and importation, while also identifying the producer, importer, intermediaries in distribution, and final purchasers through documentation"*. In the service sector, traceability is similarly defined as *"the documentation of each stage of service provision for the consumer benefiting from it"*.

2.2.2. The Traceability Obligation in French Lawtainable Urban Planning Results

The approach of the French legislator to the traceability obligation can be understood in two distinct stages:

- Pre-2004 amendments under Law No. 98-389 addressing defective products.
- Post-2004 amendments to the French Civil Code.[31]

A. Traceability Obligation under Law No. 98-389 on Defective Products

Law No. 98-389 established an early form of the traceability obligation in Article 1386-12, paragraph 2, stipulating that *"the producer cannot invoke the exemptions provided in paragraphs 4 and 5 of Article 11 if, despite the defect becoming evident within ten years of the product's entry to the market, the producer fails to implement necessary preventive measures against potential harm"*. This provision mandates that manufacturers take all reasonable measures to avert risks emerging from their products once released into circulation, particularly

28 German Court Rulings on Traceability Obligation: The German judiciary introduced the traceability obligation in decisions issued on May 17, 1981, in two cases concerning a pesticide used for spraying apple trees. According to this obligation, the producer remains responsible for monitoring the product post-market, ensuring oversight in light of scientific and technical advancements at both national and international levels. See Abdel-Moati Khayal M.-S. (2003). Liability for Defective Products and Development Risks, (1st Ed.). Cairo: Arabic Renaissance Publishing House. p. 53.

29 Law No. 03-10 (2003). On environmental protection within the framework of sustainable development. Sec. 43. <https://www.joradp.dz/FTP/JO-ARABE/2003/A2003043.pdf?znjo=43> [Lass access: 12/12/2024].

30 Executive Decree No. 12-203 (2012). Concerning the Rules Applied to Products. Official journal. Sec. 28. <https://www.joradp.dz/FTP/JO-ARABE/2012/A2012028.pdf?znjo=28> [Lass access: 12/12/2024].

31 Law No. 2004-1343 (2004). On the Simplification of Law. Official Journal of the French Republic (J.O.R.F), Sec. 278. <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000256180> [Lass access: 12/12/2024].

when evolving scientific and technical knowledge reveals defects that were initially undetectable.

B. Traceability Obligation Post-2004 Amendments

Significant revisions were made to Article 1386-12 through Law No. 04-1343, enacted on December 9, 2004, which repealed the specific traceability clause in paragraph 2. In its place, a regulatory mandate under Article 221-1-2 of the French Consumer Code, established by Ordinance No. 2004-670[32], now governs traceability obligations. Article L. 221-1-2 of the Consumer Code provides that:

"Producers, importers, and service providers must make available to consumers all necessary information to avoid potential risks associated with the consumption and/or use of the product or service throughout its normal or reasonably expected lifespan. In this regard, they are obligated to implement measures commensurate with the characteristics of the goods or services they provide, specifically to:

- *Identify risks associated with their products or services upon entry to the market or during usage;*
- *Undertake preventive actions to mitigate these risks, including product recalls, issuing effective consumer warnings, retrieving products from consumers, or suspending services as necessary".*

This mandate, known as the obligation of traceability (*obligation de traçabilité*), entails the systematic tracking of a product's lifecycle, from initial production to final consumer use, to ensure that any newly identified risks are promptly managed.[33]

German jurisprudence also emphasizes the ongoing nature of the traceability obligation, indicating that it does not conclude after a fixed period post-distribution. German law requires that manufacturers continually monitor their products, even post-marketing, to keep abreast of technological advancements in their sector. This comprehensive duty includes alerting consumers about potential risks from defective products and, in certain cases, removing products from the market or monitoring them to control risks.[34]

Thus, the traceability obligation detailed in the French Consumer Code offers a more expansive approach than that previously outlined in the Civil Code, covering all potential risks, whether stemming from scientific advancements or other sources.

CONCLUSION

This study elucidates that the invocation of scientific development risks serves as a contemporary defensive strategy for manufacturers to eschew their civil liability. There remains, however, a significant contention regarding the appropriateness of scientific development risks as a valid basis for absolving civil liability. A faction within the scholarly community supports this recognition, advocating that failure to acknowledge such risks stifles scientific progress and industrial innovation. They argue that the absence of this defense translates into manufacturers bearing prohibitive costs related to compensations and insurance premiums for unforeseeable risks, potentially stymieing industrial development.

Conversely, the application of this defense is not absolute, as manufacturers cannot employ it in exceptional cases, notably with products inherently linked to the human body. Additionally, manufacturers are obligated to maintain vigilance over their products once they enter the market, adhering to the traceability obligation.

Recommendations and Suggestions: It is proposed to establish compensation funds aimed at providing redress for victims of defective products, especially when subsequent scientific advancements post-market reveal that these products lack requisite safety features.

In summation, while Algerian legislation has

32 Decree No. 2004-670 (2004). Transposing Directive 2001/95/EC on the general safety of products and adapting national legislation to Community law in the field of product safety and conformity, Official Journal of the French Republic. Sec. 159 <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000256180> [Lass access: 12/12/2024].

33 Khamis, S., ibid. p. 153.

34 Rivasi, M. (2000, Oct. 19). Information Report No. 2669 on the European Commission Green Paper on Civil Liability for Defective Products. Submitted to the President of the National Assembly. p. 96. <https://www.assemblee-nationale.fr/europe/rap-info/i2669.pdf > [Lass access: 12/12/2024].

not yet explicitly acknowledged scientific development risks as a viable ground for civil liability exemption—unlike comparative jurisdictions that have codified it among specific exculpatory causes—there is a pressing need for legislative integration. The Algerian legislator should incorporate scientific development risks as a formal exemption within product liability rules, supplemented by additional provisions that elucidate Articles 140 bis and 140 bis 1. Furthermore, it is imperative to introduce legislative measures aimed at addressing the complexities introduced by scientific development risks.

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