e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

Reviving Our Gadgets, Reviving Our Planet: India's Right to Repair Law and the Battle Against E-Waste

Shital Satalkar

***Abstract*—The proliferation of electronic devices has transformed contemporary society while simultaneously intensifying concerns regarding electronic waste, resource depletion, consumer autonomy and environmental sustainability. Rapid technological advancement, restricted access to spare parts, expensive authorized repairs and software-related limitations frequently contribute to the premature disposal of electronic products. Against this background, the Right to Repair has emerged as an important legal and policy concept that seeks to empower consumers to maintain, repair and extend the useful lives of purchased goods. In India, the Right to Repair Portal, launched in December 2022, and the proposed Repairability Index framework represent significant initiatives towards improving repair accessibility and promoting sustainable consumption. Nevertheless, India lacks a comprehensive, cross-sector statutory Right to Repair. This article examines the relationship between India's emerging repair framework, the Consumer Protection Act, 2019, constitutional environmental jurisprudence and the E-Waste (Management) Rules, 2022. Drawing upon interdisciplinary research, it evaluates the environmental, economic and social implications of repairability, including its potential contribution to waste prevention and the formalization of repair services. The article also undertakes a comparative analysis of European Union legislation and selected state-level Right to Repair laws in the United States. It concludes that meaningful repair rights require a coordinated legal framework incorporating product durability, affordable spare parts, technical transparency, consumer remedies and environmentally responsible waste management.**

***Index Terms*—Right to Repair; Electronic Waste; Consumer Protection; Environmental Law; Circular Economy; Repairability Index; Sustainable Development; Extended Producer Responsibility.**

I. INTRODUCTION

Technological innovation has become a defining feature of modern civilization. Smartphones, laptops, household appliances and electronic equipment have transformed communication,

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

education, employment and everyday living. However, the convenience associated with these products conceals an increasingly serious environmental concern: the rapid generation of electronic waste.

Consumers frequently replace electronic products not because they have completely stopped functioning, but because repairing them has become expensive, inconvenient or technically difficult. Batteries may be permanently attached, replacement components may be unavailable, and software restrictions may prevent independent technicians from performing otherwise straightforward repairs.

The resulting cycle of consumption and disposal raises fundamental questions about the relationship between ownership, technological innovation and environmental responsibility. The Right to Repair seeks to address these concerns by ensuring that consumers and independent repair professionals have reasonable access to the information, tools and replacement components necessary to maintain purchased products. The environmental significance of this movement is particularly evident in the global electronic-waste crisis. According to The Global E-waste Monitor 2024, approximately 62 million tonnes of electronic waste were generated worldwide in 2022, while only 22.3% was documented as formally collected and recycled[1] India has begun responding to these challenges through consumer-oriented policy initiatives. The Department of Consumer Affairs launched the Right to Repair Portal in December 2022, followed by the development of a proposed Repairability Index framework for smartphones and tablets.[2]

However, an important legal distinction must be maintained: India's Right to Repair initiative is not equivalent to a comprehensive parliamentary enactment establishing enforceable repair rights across all product categories. This article examines the legal, economic and environmental dimensions of repairability and evaluates whether India's evolving framework can contribute meaningfully to electronic-waste reduction.

II. UNDERSTANDING THE RIGHT TO REPAIR

The Right to Repair refers to the principle that consumers should have meaningful opportunities to maintain, diagnose, repair and extend the useful lives of products they have lawfully purchased. Such opportunities generally require access to spare parts, technical documentation, diagnostic software, specialized tools and competent repair services. The concept challenges commercial arrangements in which manufacturers exercise extensive control over after-sales servicing, sometimes limiting repair opportunities to authorized service networks. Although manufacturers may legitimately seek to protect intellectual property, cybersecurity and product safety, restrictions that unnecessarily prevent independent repairs can undermine consumer choice and market competition.

[1] United Nations Institute for Training and Research and International Telecommunication Union, The Global E-waste Monitor 2024 (UNITAR, 2024).
[2] Department of Consumer Affairs, Government of India, Right to Repair Portal India (2022).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

Svensson-Hoglund and colleagues, in their research published in the Journal of Cleaner Production, examined regulatory barriers and market-governance challenges affecting consumer-electronics repair in the European Union and United States. Their analysis demonstrates that repairability depends upon interconnected legal, technical and economic conditions rather than consumer preference alone.[3] Repairability is also closely associated with the circular economy, an economic model that seeks to preserve the value of products and materials through maintenance, reuse, refurbishment and recycling.

Unlike conventional waste-management approaches, which concentrate on treating products after disposal, repair attempts to delay the point at which products become waste. Nevertheless, repair rights should not be confused with unlimited access to proprietary technologies. An effective framework must balance consumer interests against legitimate concerns involving intellectual property, product integrity and safety.

III. ELECTRONIC WASTE AND THE INDIAN ENVIRONMENTAL CHALLENGE

India's expanding digital economy has substantially increased the use of electrical and electronic equipment. According to figures reported by the Ministry of Environment, Forest and Climate Change, the Central Pollution Control Board estimated that India generated approximately 16.01 lakh metric tonnes of electronic waste during 2021–22 from the 21 categories of equipment covered under the earlier E-Waste (Management) Rules, 2016.[4] This figure must be distinguished from estimates using broader international classifications, because the categories and calculation methodologies are not identical. Electronic waste presents serious environmental challenges because discarded devices may contain hazardous substances alongside economically valuable materials. Improper dismantling, open burning and unsafe recycling can release contaminants into soil, air and water. Workers involved in such activities may face exposure to hazardous chemicals, fumes and particulate matter. Research by Annamalai in the Indian Journal of Occupational and Environmental Medicine examines occupational health hazards associated with informal electronic-waste recycling in India, emphasizing the risks created by unsafe processing practices.[5] Similarly, Dutta and Goel's study in Waste Management examines differences between formal and informal recycling facilities, highlighting structural difficulties within India's electronic-waste management system.[6] The environmental burden extends beyond disposal. Manufacturing electronic devices requires extraction of minerals, industrial processing, transportation, energy and water. Consequently, prematurely discarding a repairable product can generate additional

[3] Sahra Svensson-Hoglund and others, 'Barriers, Enablers and Market Governance: A Review of the Policy Landscape for Repair of Consumer Electronics in the EU and the U.S.' (2021) 288 Journal of Cleaner Production 125488.
[4] Ministry of Environment, Forest and Climate Change, 'E-Waste Management' (Press Information Bureau, 14 December 2023).
[5] J Annamalai, 'Occupational Health Hazards Related to Informal Recycling of E-Waste in India: An Overview' (2015) 19(1) Indian Journal of Occupational and Environmental Medicine 61–65.
[6] D Dutta and S Goel, 'Understanding the Gap Between Formal and Informal E-Waste Recycling Facilities in India' (2021) 125 Waste Management 163–171.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

environmental impacts through replacement manufacturing. The Right to Repair may help address this problem by encouraging longer product lifespans, reducing premature disposal and supporting more responsible consumption. However, repair should complement rather than replace environmentally sound recycling, particularly where devices are unsafe, irreparable or technologically obsolete.

IV. EVOLUTION OF INDIA'S RIGHT TO REPAIR FRAMEWORK

4.1 Establishment of the Right to Repair Portal

In July 2022, the Department of Consumer Affairs initiated the development of a national Right to Repair framework. The initiative identified four priority sectors: farming equipment, mobile phones and tablets, consumer durables, and automobiles and automobile equipment. On 24 December 2022, the government launched the Right to Repair Portal India to improve consumer access to information relating to product warranties, service networks, repair facilities and spare parts.[7]

The portal aims to reduce informational barriers between consumers, manufacturers and repair providers. Its significance lies in recognizing that repair accessibility is not merely a commercial service issue but also a matter of consumer empowerment and environmental responsibility. Nevertheless, the portal's effectiveness depends upon the quality and completeness of information supplied by participating manufacturers. Without clearly enforceable obligations concerning spare-part availability, reasonable repair costs and technical documentation, consumers may continue to experience practical barriers despite improved information access.

4.2 Development of the Repairability Index

A further development occurred in May 2025, when a government committee submitted recommendations for a Repairability Index initially applicable to smartphones and tablets. The proposed index evaluates products using six principal parameters: disassembly depth, availability of repair information, availability of spare parts, software updates, tools and fasteners. The committee recommended a five-point scoring framework, with manufacturers self-declaring repairability scores according to standardized criteria. It also proposed displaying repairability information at points of sale, on e-commerce platforms and through QR codes on product packaging.[8] This development could encourage consumers to evaluate electronic products not only according to price and performance but also according to long-term durability and repair costs.

However, self-declaration presents potential difficulties concerning independent verification, misleading claims and regulatory enforcement. The government's November 2025 communication

[7] Department of Consumer Affairs, Government of India, 'About Right to Repair India' (Right to Repair Portal).
[8] Department of Consumer Affairs, 'Report for Framework on Repairability Index (RI) in Mobile and Electronic Sector Submitted' (Press Information Bureau, 3 May 2025).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

continued to describe the Repairability Index as a proposed framework, making it important to distinguish policy recommendations from binding legal obligations.[9]

V. LEGAL FOUNDATIONS OF REPAIR RIGHTS IN INDIA

Consumer Protection Act, 2019

The Consumer Protection Act, 2019 provides an important legal basis for examining disputes involving defective products, deficient repair services and misleading commercial practices.

Section 2(9) recognizes consumer rights, including the right to information and the right to seek redressal against unfair trade practices. Sections 2(10), 2(11) and 2(47) define defects, deficiencies and unfair trade practices respectively. These provisions may become relevant where manufacturers misrepresent product durability, fail to honour warranty obligations or provide deficient after-sales services.[10]

However, the Act does not expressly establish a universal right requiring manufacturers to provide all spare parts, diagnostic tools or technical manuals to independent repairers. A dedicated repair framework could therefore clarify the scope of consumer entitlements and manufacturers' responsibilities.

Constitutional Dimensions

The constitutional relevance of repairability emerges indirectly through the relationship between environmental protection and Article 21 of the Constitution of India. In Subhash Kumar v. State of Bihar, the Supreme Court recognized that the right to life includes enjoyment of pollution-free water and air.[11] Similarly, in Vellore Citizens' Welfare Forum v. Union of India, the Supreme Court recognized sustainable development, the precautionary principle and the polluter-pays principle as important elements of Indian environmental jurisprudence.[12] In Indian Council for Enviro-Legal Action v. Union of India, the Court applied the polluter-pays principle to industrial pollution and emphasized responsibility for environmental remediation.[13] These judgments do not establish an independent constitutional Right to Repair. Nevertheless, they provide a jurisprudential foundation for environmental policies seeking to reduce pollution, prevent unnecessary waste and promote responsible resource use. The connection is therefore interpretative rather than a direct judicial recognition of repair rights.

Competition Law and Repair Markets

Repair restrictions may also raise competition-law questions. Where manufacturers control essential replacement components, diagnostic software or service information, independent repair

[9] Department of Consumer Affairs, 'Right to Repair through Repairability Index Framework' (Press Information Bureau, 2025).
[10] Consumer Protection Act 2019, Act 35 of 2019, ss 2(9), 2(10), 2(11) and 2(47).
[11] (1991) 1 SCC 598; AIR 1991 SC 420
[12] (1996) 5 SCC 647; AIR 1996 SC 2715
[13] (1996) 3 SCC 212; AIR 1996 SC 1446

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

providers may encounter barriers to entering or operating within repair markets. The Competition Act, 2002 provides a framework for examining anti-competitive agreements and abuse of dominant position under sections 3 and 4.[14]

However, the existence of manufacturer-controlled repair systems does not automatically establish a competition-law violation. Such a determination requires analysis of the relevant market, market power, commercial conduct and applicable statutory standards. Competition law can therefore complement consumer-protection measures, but it is not a substitute for clearly defined repair-access rights.

VI. THE RELATIONSHIP BETWEEN RIGHT TO REPAIR AND E-WASTE REGULATION

India's E-Waste (Management) Rules, 2022 came into force on 1 April 2023. The Rules establish an Extended Producer Responsibility framework involving registered producers, manufacturers, recyclers and refurbishes. Under the framework, regulated producers must meet recycling obligations through prescribed mechanisms involving registered recyclers and EPR certificates.[15] Extended Producer Responsibility is based on the principle that producers should bear responsibility for specified environmental consequences associated with their products. However, EPR and the Right to Repair operate at different stages of the product lifecycle. EPR principally addresses waste collection, recycling and recovery, whereas repair seeks to extend product utility before disposal. Integrating these approaches could strengthen India's circular-economy framework by encouraging manufacturers to consider durability and repairability during product design. Such integration would also support Sustainable Development Goal 12, which promotes responsible consumption and production.[16]

VII. REPAIRABILITY, PRODUCT DESIGN AND PLANNED OBSOLESCENCE

The practical ability to repair a product is often determined before it reaches the consumer. Product-design decisions concerning adhesives, fasteners, battery placement, component modularity and software architecture can significantly influence repair costs and technical feasibility. A device with replaceable components and accessible documentation may be easier to maintain than one whose essential parts are permanently bonded or electronically restricted. Research concerning repairability and circular-product design demonstrates the importance of incorporating maintenance and disassembly considerations during product development.[17] The concept of planned obsolescence is also relevant. Planned obsolescence refers to strategies that

[14] Competition Act 2002, Act 12 of 2003, ss 3–4.
[15] Ministry of Environment, Forest and Climate Change, E-Waste (Management) Rules 2022, GSR 801(E), 2 November 2022 (effective 1 April 2023).
[16] United Nations General Assembly, Transforming Our World: The 2030 Agenda for Sustainable Development, UNGA Res 70/1 (25 September 2015), UN Doc A/RES/70/1.
[17] 'Repairable Electronic Products for the Circular Economy: A Review of Design for Repair Features, Practices and Measures to Contrast Obsolescence' (2025) Discover Sustainability.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

deliberately limit product longevity or encourage premature replacement. However, technological change, accidental failure and ordinary wear should not automatically be classified as deliberate obsolescence. Legal regulation must distinguish legitimate design trade-offs from unjustified restrictions that unnecessarily shorten product life. India's proposed Repairability Index could encourage more repair-friendly product design by making maintainability visible to consumers. Nevertheless, ratings alone may have limited influence unless accompanied by transparent testing and meaningful market incentives.

VIII. ECONOMIC IMPLICATIONS OF REPAIR RIGHTS

The Right to Repair has important implications for product pricing, market competition, consumer welfare and manufacturer incentives. Jin, Yang and Zhu, in their study Right to Repair: Pricing, Welfare, and Environmental Implications, published in Management Science, developed an analytical model examining how repair-access requirements can influence manufacturers' pricing decisions and market outcomes. Their findings challenge the assumption that repair legislation necessarily produces uniformly positive environmental and economic results. Under certain model conditions, manufacturers' pricing responses may reduce consumer welfare or increase environmental impacts despite improvements in repair accessibility.[18]

This research demonstrates the importance of evaluating repair policies in relation to market structure, production costs and consumer behaviour. For India, the economic significance of repairability extends beyond large manufacturers. Independent technicians, local repair shops and small service enterprises provide important maintenance services, particularly in communities where authorized service centres may be geographically inaccessible. Improved access to replacement components and technical documentation could support these enterprises and potentially create employment opportunities. However, repair-market development must also address technical competence, safety standards, counterfeit components and consumer confidence. The objective should be to facilitate fair competition while preserving product quality and public safety.

IX. CONSUMER BEHAVIOUR AND THE REPAIR CULTURE

Even where repair services are legally available, consumers may still prefer replacing products. Repair decisions are influenced by cost, convenience, trust, technological knowledge, perceived product value and the availability of reliable service providers. Parajuly and colleagues, in research published in the Journal of Industrial Ecology, examined repair behaviour from a systems perspective using survey responses from 922 participants across 14 countries. Their findings indicate that repair behaviour is influenced by personal attitudes as well as broader infrastructural,

[18] Chen Jin, Lusheng Yang and Chen Zhu, 'Right to Repair: Pricing, Welfare, and Environmental Implications' (2023) 69(2) Management Science 1017–1036.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

financial, social and institutional conditions.[19] Consumers may hesitate to use independent repair services because of concerns regarding replacement-part quality, data security, warranty implications or technician reliability. A successful repair framework must therefore combine legal access with public awareness, transparent pricing, technician training and trustworthy service standards. Repairability is not simply a question of whether repair is technically possible. It also concerns whether consumers perceive repair as a practical, reliable and economically sensible option.

X. INFORMAL REPAIR WORKERS AND ENVIRONMENTAL JUSTICE

India's repair and electronic-waste sectors have significant social and occupational dimensions. Informal repairers and waste handlers contribute to material recovery and product-life extension, but many operate without adequate access to formal training, protective equipment or environmentally sound processing infrastructure. Pandey and Govind's research concerning informal electronic-waste recycling sites in Delhi highlights the social consequences of electronic-waste management and the conditions experienced by workers involved in these activities.[20] Awasthi and colleagues' research on India's e-waste management similarly emphasizes the need for improved collection systems, effective regulation and environmentally responsible processing.[21]

These findings demonstrate that electronic-waste policy cannot be separated from questions of environmental justice. Workers engaged in dismantling and material recovery may bear disproportionate health risks, while consumers and manufacturers benefit from the availability of inexpensive products and services. An inclusive Right to Repair framework should recognize the economic importance of local repair enterprises while creating pathways towards safer working conditions. Possible measures include technical certification, affordable training, access to genuine replacement components and support for formal business registration. Importantly, repair and hazardous-waste recycling are distinct activities. Policies should encourage safe repair and refurbishment without legitimizing unsafe dismantling or disposal practices.

XI. COMPARATIVE ANALYSIS: EUROPEAN UNION AND UNITED STATES

European Union: Repair as a Consumer and Environmental Right

The European Union has developed an increasingly coordinated framework linking repairability, consumer protection and environmental sustainability. Directive (EU) 2024/1799, adopted on 13

[19] Keshav Parajuly and others, 'Product Repair in a Circular Economy: Exploring Public Repair Behavior from a Systems Perspective' (2024) 28(1) Journal of Industrial Ecology 74–86.
[20] P Pandey and M Govind, 'Social Repercussions of E-Waste Management in India: A Study of Three Informal Recycling Sites in Delhi' (2014) 71(3) International Journal of Environmental Studies 241–260.
[21] AK Awasthi and others, 'E-Waste Management in India: A Mini-Review' (2018) Waste Management & Research.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

June 2024, establishes common rules promoting the repair of goods. Member States were required to transpose and apply the Directive by 31 July 2026.[22]

The Directive seeks to make repair more accessible and attractive to consumers. For covered products, manufacturers are subject to specified repair obligations, including requirements concerning reasonable repair periods and pricing. The Directive also strengthens consumers' incentives to choose repair over replacement. Where a consumer chooses repair as a remedy within the seller's legal liability period, that period is extended by 12 months. These measures operate alongside the European Union's existing sale-of-goods framework under Directive (EU) 2019/771.[23] The EU has additionally introduced the Ecodesign for Sustainable Products Regulation, Regulation (EU) 2024/1781, which establishes a framework for setting sustainability requirements for covered product groups.[24] Directive (EU) 2024/825 further strengthens consumer information and protections concerning environmental claims and product durability.[25]

The EU's Circular Economy Action Plan provides the broader policy context for these measures, emphasizing resource efficiency, sustainable product design and waste prevention.[26] An important feature of the European model is the relationship between product-design standards and consumer remedies. Repairability is treated not merely as a voluntary manufacturer service, but as an issue requiring coordinated regulatory intervention. Nevertheless, EU repair obligations remain subject to product-specific coverage, exceptions and implementation requirements. They do not create an unrestricted repair entitlement for every electronic device.

United States: State-Level Repair Legislation

The United States has adopted a more decentralized approach. Rather than relying upon one comprehensive federal Right to Repair law for consumer electronics, several states have enacted legislation governing access to repair information, parts and tools. New York's Digital Fair Repair Act, enacted in 2022, requires manufacturers of covered digital electronic equipment to provide specified repair resources to owners and independent repair providers, subject to statutory limitations.[27] Minnesota's Digital Fair Repair Act, effective from July 2024, similarly establishes repair-access requirements for covered products.[28] California's Right to Repair Act, enacted

[22] Directive (EU) 2024/1799 of the European Parliament and of the Council of 13 June 2024 on common rules promoting the repair of goods [2024] OJ L, 2024/1799.
[23] Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods [2019] OJ L 136/28.
[24] Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products.
[25] Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition.
[26] European Commission, A New Circular Economy Action Plan: For a Cleaner and More Competitive Europe, COM(2020) 98 final (11 March 2020).
[27] New York Digital Fair Repair Act, 2022 NY Senate Bill S4104-A, as enacted.
[28] Minnesota Digital Fair Repair Act, Minn Stat § 325E.72 (2023).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

through Senate Bill 244, requires covered manufacturers to provide repair-related materials for specified periods depending on the wholesale price and statutory coverage of the product.[29]

Oregon's Senate Bill 1596, enacted in 2024, addresses repair access and certain restrictions associated with electronic component functionality.[30] These state laws illustrate a legislative approach based on enforceable duties rather than reliance exclusively upon voluntary manufacturer disclosures. At the federal level, the Magnuson–Moss Warranty Act provides protections relevant to consumer warranties and restrictions involving the use of particular repair services or components.[31]

The Federal Trade Commission's 2021 report, Nixing the Fix, examined manufacturer repair restrictions and their implications for consumers and competition.[32] However, American repair legislation is not uniform. State laws differ in product coverage, exemptions, implementation dates and enforcement mechanisms.

XII. CHALLENGES IN IMPLEMENTING THE RIGHT TO REPAIR IN INDIA

Several challenges must be addressed before repair rights can become practically effective.

Intellectual property and cybersecurity: Manufacturers may raise legitimate concerns regarding proprietary software, security vulnerabilities and confidential technical information. Regulatory obligations must distinguish information necessary for safe repair from material whose disclosure could create disproportionate risks. Spare-part affordability: Repair rights provide limited practical value when replacement components are unavailable or cost nearly as much as a new device. Reasonable access conditions are therefore essential. Software-related obsolescence: Electronic products increasingly depend upon firmware, operating systems and authentication systems. Discontinued updates or restrictive component pairing may render functional hardware difficult to maintain.

Repair quality and safety: Inadequate repairs can create electrical hazards, battery failures and data-security risks. Independent repair access should therefore be accompanied by appropriate safety standards and professional training. Regulatory enforcement: Information disclosure alone may not prevent restrictive commercial practices. A credible framework requires accessible complaints procedures, transparent obligations and proportionate penalties. Environmental measurement: Repair is not automatically environmentally preferable in every situation. The comparative environmental effects of repair and replacement depend upon device efficiency, repair requirements and the extent of additional product life achieved. These challenges demonstrate the importance of evidence-based regulation that accounts for both consumer welfare and environmental outcomes.

---

[29] California Right to Repair Act, California Senate Bill 244 (2023), codified at Cal Pub Res Code §§ 42488–42488.3.

[30] Oregon Senate Bill 1596 (2024).

[31] Magnuson–Moss Warranty—Federal Trade Commission Improvement Act, Pub L No 93-637, 88 Stat 2183 (1975), codified at 15 USC §§ 2301–2312.

[32] Federal Trade Commission, Nixing the Fix: An FTC Report to Congress on Repair Restrictions (May 2021).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

XIII. POLICY RECOMMENDATIONS

India could strengthen its Right to Repair framework through a coordinated legislative and regulatory strategy.

First, Parliament could consider a dedicated Right to Repair statute or targeted amendments to existing consumer-protection legislation. Such measures could define minimum manufacturer obligations and corresponding consumer entitlements. Second, the Repairability Index should incorporate independent verification, standardized testing and transparent scoring criteria. Publicly accessible repairability information would enable consumers to compare products more effectively. Third, manufacturers could be required to make essential spare parts, repair manuals and diagnostic tools available for reasonable periods, subject to proportionate safety, security and intellectual-property safeguards. Fourth, repairability should be integrated with Extended Producer Responsibility. Producers could be encouraged to design durable products and facilitate refurbishment before end-of-life recycling becomes necessary. Fifth, independent repair enterprises should receive greater institutional support through technical training, certification, access to components and suitable financing opportunities. Sixth, consumer awareness programmes should explain the economic and environmental implications of repair, while addressing concerns about service quality, warranty coverage and data protection. Finally, repair policy should be assessed through measurable indicators, including repair costs, spare-part availability, product lifespan, consumer complaints and electronic-waste generation.

Such measures would support the objectives of the Environment (Protection) Act, 1986 and India's broader environmental governance framework.[33] They would also complement the international movement towards sustainable production and consumption reflected in the United Nations' 2030 Agenda for Sustainable Development.[34]

XIV. CONCLUSION

The Right to Repair represents an important development in the relationship between consumer autonomy, technological innovation and environmental sustainability. India's Right to Repair Portal and proposed Repairability Index demonstrate increasing recognition of the need to improve product durability and repair accessibility. However, the effectiveness of these initiatives depends upon whether they translate into affordable services, reliable information and enforceable consumer protections. Research on repair economics demonstrates that regulatory outcomes depend upon manufacturer incentives and market conditions. Studies of consumer behaviour reveal that legal access alone may not guarantee increased repair activity. Research concerning informal electronic-waste management further illustrates the importance of occupational safety and environmental justice.

[33] Environment (Protection) Act 1986, Act 29 of 1986 (India).
[34] United Nations General Assembly, Transforming Our World: The 2030 Agenda for Sustainable Development, UNGA Res 70/1 (25 September 2015), UN Doc A/RES/70/1.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR

The comparative experience of the European Union and United States provides valuable lessons concerning statutory repair obligations, product-design standards and independent repair access. India therefore has an opportunity to develop a distinctive framework combining consumer protection, competition, environmental responsibility and support for local repair enterprises. A comprehensive repair strategy should not treat repairability merely as a mechanism for reducing service costs. It should recognize product longevity as an important component of sustainable consumption and resource conservation.

Ultimately, a transition towards a circular economy requires society to reconsider the assumption that technological progress necessarily demands frequent replacement. Reviving our gadgets is not simply about restoring broken devices. It is about extending the value of resources, strengthening consumer choice and ensuring that technological advancement does not come at an unnecessary environmental cost. As the global community seeks to reduce waste and promote responsible production, India's developing Right to Repair framework could contribute to a broader shift from disposable consumption towards long-term product stewardship.[35]

[35] European Commission, A New Circular Economy Action Plan: For a Cleaner and More Competitive Europe, COM(2020) 98 final (11 March 2020).