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FROM JUGAAD TO JURISPRUDENCE RECOMMENDATIONS FOR FOSTERING AND PROTECTING GRASSROOTS INNOVATION

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I. ABSTRACT

Grassroots innovation, often colloquially termed 'jugaad' in the Indian context, represents a vast, untapped reservoir of creative problem-solving. It embodies frugal, functional, and context-specific solutions developed by individuals and communities at the periphery of formal research and development ecosystems. However, this ingenuity exists in a precarious legal and institutional vacuum. While celebrated for its resourcefulness, it is simultaneously hampered by a lack of scalability, sustainability, and legal protection. The prevailing intellectual property (IP) regime, designed for capital-intensive, formal innovation, presents significant barriers-prohibitive costs, complex procedures, and stringent patentability criteria-to grassroots innovators. This article argues that a paradigm shift is necessary, moving from attempts to shoehorn grassroots creativity into an ill-fitting IP framework towards developing a bespoke, multi-pronged jurisprudential and policy strategy. For our purposes, we can classify grassroots innovation into three broad categories which are Category 1: Improvisational Solutions (The Classic Jugaad), Category 2: Systemic Frugal Innovations, Category 3: Codified and Community-Held Traditional Knowledge. It analyses the inadequacies of the current Indian legal instruments, including patents, designs, and copyrights, in safeguarding these unique innovations. Drawing on the work of institutions like the National Innovation Foundation, it proposes a holistic framework. Key recommendations include the introduction of a second-tier 'utility model' patent system, the creation of decentralised 'Gram Innovation Kendras' for local support, the establishment of innovation promotion vouchers to defray IP costs, and the development of a sui generis framework to protect community-held traditional knowledge. Ultimately, the article posits that by transforming our legal and institutional

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approach, we can transition grassroots innovation from a celebrated but transient phenomenon into a sustainable engine of inclusive growth and self-reliance.

II. KEYWORDS

Grassroots Innovation, Intellectual Property (IP) Regime, Jugaad, Inclusive Growth, Utility Model Patent.

III. INTRODUCTION

In the bustling markets and agrarian landscapes of India, a unique brand of ingenuity flourishes. It is the farmer who modifies a bicycle to create a low-cost plough, the potter who invents a clay refrigerator that runs without electricity, and the mechanic who crafts a vehicle from disparate scrap parts. This phenomenon, popularly known as *jugaad*, is a testament to the human spirit's ability to innovate under constraints.[3] While often romanticised as a symbol of Indian resourcefulness, *jugaad* exists on a spectrum, ranging from temporary, makeshift fixes to genuinely systemic grassroots innovations that offer sustainable solutions to local problems. These innovations are the lifeblood of a resilient society, addressing needs that are often overlooked by mainstream markets and formal research institutions.

However, this vibrant ecosystem of creativity operates in a jurisprudential grey area, a space between informal ideation and formal recognition. The journey from a clever idea conceived in a workshop to a commercially viable and legally protected product is fraught with peril. This 'valley of death' for grassroots innovation is characterised by a lack of access to finance, mentorship, market linkages, and, most critically, effective legal protection. The very nature of grassroots innovation-incremental, frugal, and often built upon existing knowledge-makes it vulnerable. Without a robust legal framework to safeguard their intellectual creations, innovators are at constant risk of their ideas being misappropriated by larger entities with greater resources, leaving the original creator with little to no economic benefit.

[3] Anil K Gupta, 'Grassroots Innovation: Minds on the margin are not marginal minds' (Random House India 2016).

The current intellectual property rights (IPR) regime in India, as in most parts of the world, is tailored to the needs of formal, capital-intensive R&D. The high costs of patent filing, the complexity of legal procedures, and the stringent criteria for novelty and inventive step create formidable barriers for the average grassroots innovator.[4] To expect a farmer from rural Bihar or an artisan from Gujarat to navigate the labyrinthine corridors of the Indian Patent Office is to misunderstand the very context in which their innovation was born. The result is a tragic paradox: the law designed to incentivise innovation inadvertently excludes a vast segment of innovators who arguably need its protection the most.

This article argues for a fundamental reimagining of our approach to fostering and protecting grassroots innovation. It contends that merely attempting to fit the square peg of grassroots creativity into the round hole of conventional IPR is an inadequate and ultimately futile exercise. Instead, a bespoke, multi-layered framework is required-a new jurisprudence that acknowledges the unique characteristics of these innovations and builds an enabling ecosystem around them. This framework must move beyond a singular focus on patents to encompass a suite of legal tools, institutional mechanisms, and policy initiatives.

This analysis will proceed in four parts. First, it will deconstruct the concept of grassroots innovation, distinguishing it from the often-pejorative connotations of *jugaad* and creating a typology to inform targeted policy interventions. Second, it will critically examine the existing Indian legal landscape-patents, designs, copyrights, and trade secrets-to expose its structural inability to adequately serve the needs of grassroots innovators. Third, it will review the pioneering work of institutions like the National Innovation Foundation (NIF) to identify best practices and existing gaps in institutional support. The landscape of grassroots innovation in India represents a significant, yet often underestimated, source of creative and practical solutions. While the exact scope of this informal sector is difficult to measure, the efforts of institutions dedicated to its documentation provide a powerful quantitative insight. For instance, the National Innovation Foundation (NIF), a key autonomous body, has been

[4] Feroz Ali, The Law of Patents (2nd edn, LexisNexis 2012) 78-85.

instrumental in scouting and validating these innovations. As of its latest reports, NIF has documented over 360,000 ideas and innovations from across the country.

More critically, a substantial portion of these ideas possess the novelty and utility required for formal intellectual property protection. To date, NIF has filed over 1550 patent applications in India and abroad on behalf of these grassroots innovators, with over 820 patents having been successfully granted.[5] This figure not only quantifies the immense innovative potential present at the grassroots level but also underscores the critical challenges and opportunities related to intellectual property rights, technology transfer, and scaling that these innovators face. The sheer volume of patentable ideas documented by a single organization firmly establishes the empirical foundation of this research, highlighting the urgent need to understand and support this vital ecosystem.

Finally, based on this analysis, it will propose a concrete set of recommendations for a new jurisprudential and policy framework designed to truly empower India's invisible innovators, ensuring that their genius translates into sustainable prosperity for themselves and their communities.

A. Research Problem

Despite the significant creativity and socio-economic potential of grassroots innovations (commonly known as jugaad) in India, these innovations remain inadequately protected and supported within the existing intellectual property rights (IPR) framework. The prevailing legal regime is predominantly designed for formal, capital-intensive innovations and is characterized by prohibitive costs, complex procedures, and stringent criteria that exclude many grassroots innovators from accessing effective legal protection. Consequently, these innovators face risks of misappropriation, lack avenues for scaling and commercialization, and receive insufficient institutional support. The problem calls for a critical examination of the mismatch between the current IP laws and the unique needs of grassroots innovation and an urgent search for a specialized, accessible, and supportive legal and policy

[5] National Innovation Foundation - India, *Annual Report 2024-2025* (Gandhinagar, Gujarat: NIF, 2025), 15. http://www.nif.org.in/document/annual-report-2024-25.

framework to empower and sustain this vital sector of India's innovation ecosystem. This problem highlights the paradox of celebrated but vulnerable grassroots creativity operating in a legal and institutional vacuum, impeding its potential to drive inclusive growth and self-reliance. The research thus aims to uncover these gaps and propose jurisprudential reforms and institutional measures tailored to the nature of grassroots innovation.

B. Research Objectives

1. To examine the nature and scope of grassroots innovation (jugaad) in India and its socio-economic impact.
2. To critically analyze the existing intellectual property regime in India for its effectiveness in protecting grassroots innovations.
3. To explore institutional support mechanisms, specifically the role of the National Innovation Foundation and similar bodies.
4. To propose a comprehensive legal and policy framework tailored to fostering and protecting grassroots innovation.
5. To recommend specific legal reforms, institutional strategies, and educational initiatives to empower grassroots innovators.

C. Research Questions

1. What are the defining characteristics and categories of grassroots innovation in the Indian context?
2. What are the limitations and challenges posed by the current Indian intellectual property laws to grassroots innovators?
3. How effective are current institutional supports like the National Innovation Foundation in promoting grassroots innovation?
4. What legal and policy reforms can better encourage and protect grassroots innovation while ensuring equitable benefit-sharing?
5. How can education and awareness contribute to fostering a culture of grassroots innovation?

D. Research Methodology

This research will employ a qualitative approach comprising doctrinal legal analysis of existing IP laws, case studies of grassroots innovations documented by institutions like the National Innovation Foundation, and policy analysis to formulate recommendations. The data will include academic literature, government reports, legal statutes, and institutional publications.

E. Literature Review

The literature review will survey scholarly works on grassroots innovation, jugaad management strategies, intellectual property challenges in informal sectors, and sui generis legal frameworks globally. It will include studies on the socio-economic impact of grassroots innovations in India, critiques of patent law accessibility, and institutional models supporting innovation diffusion. Relevant frameworks like the Honeybee Network and international treaties such as the Nagoya Protocol on Access and Benefit-Sharing will be examined.

F. Research and Analysis

1. Defining Grassroots Innovation: Analysis of the term 'jugaad' and the typology into improvisational solutions, systemic frugal innovations, and community-held traditional knowledge, highlighting their unique needs.
2. Limitations of Current IP Regime: Examination of the Indian Patents Act, Designs Act, Copyright Act, and Geographical Indications Act to identify barriers, procedural complexities, and exclusions affecting grassroots innovators.
3. Institutional Support Mechanisms: Evaluation of the role and effectiveness of institutions like the National Innovation Foundation and Honey Bee Network in scouting, protecting, and commercializing grassroots innovations.
4. Proposed Legal and Policy Reforms: Critical analysis of recommended reforms such as the introduction of utility models, innovation vouchers, pro bono IP clinics, Gram Innovation Kendras, sui generis protections, and grassroots micro-venture capital.

5. Educational and Awareness Initiatives: Assessment of the impact of integrating innovation and IP education into the curriculum and the role of local language awareness campaigns in fostering innovation culture.

IV. THE SPECTRUM OF GRASSROOTS INNOVATION: BEYOND THE 'JUGAAD' STEREOTYPE

The term *jugaad* has entered the global lexicon, often used to describe any form of frugal or improvisational problem-solving. While popularised by management literature,[6] the term carries a duality that can be unhelpful for policy formulation. On one hand, it is celebrated as a mindset of flexible, out-of-the-box thinking. On the other, it can connote a temporary, non-scalable, and sometimes unsafe workaround that compromises on quality and long-term viability. A vehicle cobbled together from a diesel water pump and scrap metal, while innovative, may be dangerously unsafe and environmentally harmful.[7] To build a robust legal and policy framework, it is crucial to move beyond this monolithic and often stereotypical label and appreciate the diverse spectrum of activities it encompasses. For our purposes, we can classify grassroots innovation into three broad categories.

A. Category 1: Improvisational Solutions (The Classic Jugaad)

This category represents the most literal interpretation of jugaad. These are reactive, context-specific fixes for immediate problems, created with no intention of replication or commercialisation. Examples include using a plastic bottle as a makeshift shower head or repairing a broken pipe with tape and a piece of rubber. While demonstrating ingenuity, these solutions are typically ephemeral and have limited economic or social impact beyond their immediate application. They rarely possess the requisite novelty or industrial applicability to qualify for any form of IP protection, nor is such protection usually sought or desired by the creator. Policy interventions are largely irrelevant for this category, as it is a spontaneous and informal mode of problem-solving.

[6] See, for example, Navi Radjou, Jaideep Prabhu and Simone Ahuja, Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth (Wiley 2012).
[7] Rishikesha T Krishnan, 'Jugaad's Perils' (2010) 48(13) Economic and Political Weekly 12.

B. Category 2: Systemic Frugal Innovations

This is the most critical category from a policy perspective. These are innovations that, while born from resource constraints, represent a structured and thoughtful solution to a persistent problem. They are intended to be durable, replicable, and often have the potential for significant social and commercial impact. The 'Mitticool' refrigerator, a clay-based fridge that works without electricity, invented by Mansukhbhai Prajapati, is a prime example.[8] Another is Arunachalam Muruganantham's invention of a low-cost machine to produce sanitary pads, which has revolutionised feminine hygiene for women in rural India.[9] These innovations are distinct from mere improvisations because they are:

1. Systemic: They address the root cause of a problem, not just a symptom.
2. Frugal: They achieve a high degree of functionality with minimal resources.
3. Scalable: They are designed in a way that allows for replication and wider dissemination.
4. Novel: They often involve a non-obvious combination of existing technologies or a new use for existing materials.

It is this category of innovators who stand to benefit the most from a supportive legal and policy framework, and who are currently the most underserved by the existing IPR regime. Their creations represent tangible intellectual assets that warrant protection and require support for commercialisation.

C. Category 3: Codified and Community-Held Traditional Knowledge

This category includes innovations that are derived from traditional knowledge systems held by communities over generations. This can range from specific herbal formulations for treating ailments to unique agricultural practices adapted to local micro-climates, or traditional handicraft techniques. Unlike the first two categories,

[8] National Innovation Foundation, 'Mitticool Refrigerator' (NIF Website) https://nif.org.in/innovation/mitticool-refrigerator/333 accessed 5 September 2025.

[9] The story was popularised by the film 'Pad Man' (2018) and is well-documented.22 See Arunachalam Muruganantham, 'How I started a sanitary napkin revolution!' (TED, November 2012) https://www.ted.com/talks/arunachalam_muruganantham_how_i_started_a_sanitary_napkin_revolution accessed 5 September 2025.

which are typically attributable to an individual or a small group, this knowledge is often diffuse and communally owned. The challenge here is not just protecting a single invention but safeguarding a collective intellectual heritage from misappropriation and ensuring that any benefits derived from its commercial use are shared equitably with the source community. Existing IP laws, which are premised on individual ownership and novelty (in the sense of being unknown to the public), are particularly ill-suited to protect this form of knowledge.[10]

By disaggregating 'jugaad' into these distinct categories, we can formulate more precise and effective interventions. While improvisational solutions require little more than admiration, systemic frugal innovations demand a robust framework for IP protection, incubation, and market access. Community-held knowledge, in turn, necessitates a *sui generis* (unique) legal approach that respects its collective nature. The failure of the current legal system lies in its inability to recognise and cater to these distinctions.

V. THE EXISTING LEGAL LANDSCAPE: AN ILL-FITTING SUIT?

The Indian legal framework for intellectual property is comprehensive, comprising statutes on patents, designs, copyrights, and geographical indications. However, this framework was primarily constructed with the formal, organised sector in mind. When applied to the context of grassroots innovation, it reveals itself to be less of a protective shield and more of a gauntlet of obstacles.

A. The Patents Act, 1970: A Prohibitive Hurdle

The patent is the strongest form of protection for an invention, granting the owner a 20-year monopoly. However, for a grassroots innovator, the patent system is largely inaccessible for several reasons.

Stringent Patentability Criteria: The Act requires an invention to be novel, possess an inventive step (be non-obvious to a person skilled in the art), and be capable of industrial application.[11] While many systemic frugal innovations are novel, proving

[10] Graham Dutfield, 'Protecting Traditional Knowledge: Pathways to the Future' (2004) ICTSD Programme on IPRs and Sustainable Development, Issue Paper No 16.
[11] The Patents Act 1970, s 2(1)(j).

an 'inventive step' can be challenging. An innovation that appears to be a simple, 'obvious' modification to a person skilled in the art (e.g., a patent examiner with an engineering degree) may in fact be a breakthrough solution in a resource-poor context. The frugal nature of the innovation can be misinterpreted as a lack of technical sophistication, leading to the denial of a patent.[12] The case of *Dhanpat Seth v Nil Kamal Plastic Crates Ltd* illustrated how prior public use, even if informal, can defeat a patent claim, a significant risk for grassroots innovations developed openly within a community.[13]

Procedural Complexity and Cost: The process of drafting a patent application, filing it, responding to examination reports, and attending hearings requires specialised legal expertise. The costs associated with patent attorneys, filing fees, and renewal fees can run into ₹30,000 to ₹1,00,000+, a sum far beyond the means of most grassroots innovators.[14] While some fee concessions exist for individuals, they are insufficient to cover the full spectrum of costs, particularly legal representation.

Statutory Exclusions: Section 3 of the Act lists what are not considered inventions. This includes, for instance, 'a mere discovery of a new form of a known substance' (Section 3(d)), 'a mere arrangement or re-arrangement or duplication of known devices' (Section 3(f)), and 'a method of agriculture or horticulture' (Section 3(h)). These exclusions, while designed to prevent evergreening and protect public domains, can inadvertently disqualify genuine frugal innovations that often involve creatively rearranging known devices or developing new agricultural techniques.

B. The Designs Act, 2000: Protection of Form, Not Function

The Designs Act protects the aesthetic features-the shape, configuration, pattern, or ornamentation-of an article.[15] It is cheaper and simpler to obtain a design registration than a patent.10 This can be a useful tool for innovators whose products have a unique and appealing appearance, such as the earthen design of the Mitticool fridge.

[12] Shamnad Basheer, 'India's New 'Utility Model' Patent Regime: A Cure for the Common Man?' (2005) 1(1) Journal of Intellectual Property Law & Practice 56.
[13] Dhanpat Seth and Ors v Nil Kamal Plastic Crates Ltd [2007] PTC 556 (Del).
[14] Controller General of Patents, Designs and Trade Marks, 'Fees for Patent Applications' (IP India Website) https://ipindia.gov.in/fees-patents.htm accessed 5 September 2025.
[15] The Designs Act 2000, s 2(d).

However, design protection is fundamentally limited because it does not protect the functional aspect of the invention. An imitator could legally produce a refrigerator with the same cooling mechanism as the Mitticool, as long as they alter its external appearance sufficiently. Thus, while a useful supplementary tool, design registration alone is inadequate to protect the core ingenuity of a functional grassroots innovation.

C. The Copyright Act, 1957: Protecting Expression, Not Ideas

Copyright protects the expression of an idea, not the idea itself. For a grassroots innovator, this means that while the technical drawings, instruction manuals, or software code associated with an invention can be protected by copyright,[16] the underlying functional concept remains unprotected. An individual could study the copyrighted drawings of a low-cost water pump, understand its mechanism, and build their own version without infringing the copyright. This makes copyright a weak tool for safeguarding the functional essence of most hardware-based grassroots innovations.

D. Geographical Indications and Traditional Knowledge

The Geographical Indications of Goods (Registration and Protection) Act, 1999, is designed to protect products originating from a specific geographical territory, where a particular quality or reputation is attributable to that origin (e.g., Darjeeling Tea).[17] This is effective for certain community-based products but is not applicable to individual inventions or to traditional knowledge that is not linked to a specific location.12 India has also made strides in protecting its traditional knowledge through the Traditional Knowledge Digital Library (TKDL), a database that documents traditional medicine to prevent its erroneous patenting by foreign entities.[18] However, the TKDL is a defensive mechanism; it prevents misappropriation but does not create a positive right for communities to benefit commercially from their own knowledge. It exemplifies the gap between preventing theft and proactively rewarding creation.

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[16] The Copyright Act 1957, s 2(o) defines 'literary work' to include computer programs and tables.
[17] The Geographical Indications of Goods (Registration and Protection) Act 1999, s 2(1)(e).
[18] Traditional Knowledge Digital Library, 'About TKDL' (TKDL Website) http://www.tkdl.res.in/tkdl/langdefault/common/Abouttkdl.asp?GL=Eng accessed 5 September 2025.

E. Recent Judgements

1. **The Challenge of Proving "Novelty" Against Traditional Knowledge (Patents)**

The core of the patent system is the requirement of "novelty" and an "inventive step." For grassroots innovators, whose work is often an incremental improvement upon generations of traditional knowledge, this is a formidable barrier. The legal system struggles to distinguish between what is unpatentable "traditional knowledge" and what is a genuine, novel invention derived from it.

A case that, while not a court ruling on infringement, illustrates the systemic obstacle is the pre-grant opposition filed by the Traditional Knowledge Digital Library (TKDL) against a patent application by a major corporation. A company filed a patent for a formulation using Indian herbs for treating a specific ailment. The TKDL, a state-run database, successfully opposed the grant by demonstrating that the formulation and its use were already documented in ancient and medieval Indian texts. While a victory for protecting traditional knowledge, this case underscores the gauntlet: a grassroots innovator using the same knowledge would not only be denied a patent but must also contend with the constant threat of their community's knowledge being appropriated by better-resourced entities who can navigate the patent filing process.[19] This defensive mechanism puts the onus on Indian institutions to constantly police global patent offices, a resource-intensive task that individual innovators or communities cannot possibly undertake.

2. **The Hurdle of "Identifiable Author" and "Originality" (Copyrights)**

Copyright law is designed to protect the original work of an identifiable author. This model fits poorly with traditional arts and crafts, which are often community-developed, passed down orally, and evolve collectively over centuries. An individual

[19] While specific TKDL opposition cases are administrative and not typically published as court case law, the legal principle is rooted in Section 3(p) of the Patents Act, 1970, which bars patents on inventions that are essentially traditional knowledge.[12] The case referenced is analogous to the well-documented opposition by the Council of Scientific and Industrial Research (CSIR) that led to the revocation of a European patent on the fungicidal properties of Neem (*EP 436257*) and a U.S. patent on the wound-healing properties of turmeric (*U.S. Pat. No. 5,401,504*). These foundational cases established the principle that the TKDL now enforces administratively.

artisan seeking to protect a traditional design faces the immense challenge of proving they are the sole "author" of a work that is inherently communal.

This issue was central to the discussions surrounding the infringement of motifs from the Ajrakh block printing tradition of Kutch, Gujarat. Major fashion brands have been accused of lifting these intricate, centuries-old designs without acknowledgment or compensation. An individual artisan attempting to sue for copyright infringement would face an immediate legal challenge: proving their specific expression of the design is "original" and not merely a reproduction of a traditional pattern in the public domain. The law, structured around individual authorship, fails to provide a viable remedy for the collective cultural property of the artisan community.[20] The legal framework forces a choice between claiming individual authorship, which is often factually incorrect, or having no protection at all.

3. **The High Bar for Proving "Passing Off" and Reputation (Trademarks & GIs)**

Geographical Indications (GIs) and the common law tort of "passing off" are meant to protect the collective reputation and goodwill associated with products from a specific region. However, enforcing these rights requires significant organisational capacity, extensive documentation, and the financial resources to engage in prolonged litigation-all of which are typically beyond the reach of small producer associations.

The ongoing struggles of Basmati rice farmers illustrate this gap. Despite Basmati being a registered GI in India, disputes continue to arise, particularly in international markets where entities attempt to trademark the name or patent related rice varieties. While the Indian government litigates these cases, individual farming communities or small cooperatives lack the standing and resources to independently challenge such infringements in foreign jurisdictions.[21] Furthermore, a domestic case like *Tea Board,*

[20] This is a well-documented issue in legal scholarship and advocacy, though it rarely culminates in a reported judgment precisely because the barriers to filing are so high. The legal challenge would be based on the definition of "author" under Section 2(d) and "originality" under Section 13 of the Copyright Act, 1957. A lawsuit would likely fail at the prima facie stage for want of a clearly identifiable author whose rights have been infringed.

[21] The most prominent example is the dispute between India and Pakistan regarding the GI status of Basmati in the European Union, an institutional battle far beyond the scope of any single farmer's association. See the application filed by the Agricultural and Processed Food Products Export

India v. ITC Limited highlighted the difficulty in preventing even reputed domestic companies from using a GI name as part of a lounge's branding. The Calcutta High Court initially found this did not constitute infringement. While this was a battle between two large entities, it demonstrates the high evidentiary burden required to prove that such usage misleads the public and dilutes the value of the GI-a burden that would be nearly impossible for a small, unorganised group of producers to meet.[22]

These examples demonstrate that the Indian IP framework, while robust on paper, often imposes a "gauntlet of obstacles" for grassroots innovators. The legal architecture is predicated on concepts of individual ownership, documented novelty, and the financial capacity for litigation, which are frequently misaligned with the communal, incremental, and resource-constrained reality of the informal innovation sector.

In summary, the current legal arsenal is a collection of ill-fitting tools. Patents are too expensive and demanding, designs protect only the shell, and copyrights protect only the description. The system lacks a middle ground-an accessible, affordable, and appropriate form of protection tailored to the unique nature of systemic frugal innovations.

VI. INSTITUTIONAL SUPPORT: ISLANDS OF EXCELLENCE IN A SEA OF APATHY

Recognising the gap left by the formal legal system, several pioneering institutions have emerged to champion the cause of grassroots innovators. These organisations provide a crucial bridge, offering services that range from scouting and documentation to IPR facilitation and value addition.

The most prominent among these is the National Innovation Foundation (NIF), an autonomous body of the Department of Science and Technology, Government of

Development Authority (APEDA) with the EU. The challenges highlight the transactional costs and international legal expertise required.

[22] *Tea Board, India v. ITC Limited*, [2011] 4 CHN 605. Although this specific order was later set aside and remanded for trial, the initial ruling and the prolonged nature of the litigation

India. Established in 2000, NIF's mission is to make India an innovative and creative society by expanding the policy and institutional space for grassroots innovators.[23] Its work is built upon the foundational philosophy of the Honey Bee Network, initiated by Professor Anil Gupta. The Network's core belief is that knowledge and creativity of grassroots innovators should be acknowledged, respected, and rewarded.[24] It operates on the principles of documenting innovations in local languages, ensuring that the source of the knowledge is acknowledged, and striving for equitable benefit-sharing.

NIF undertakes several critical functions: Scouting and Documentation: Through biennial national competitions and collaborations with local partners, NIF actively seeks out and documents innovations from across the country.

1. IPR Management: NIF has a dedicated IP management cell that files patents and other IP applications on behalf of innovators, bearing all associated costs.[17] This is perhaps its most significant intervention, directly addressing the financial barriers to IP protection. To date, NIF has filed over 1550 patents on behalf of innovators, a remarkable achievement.[25]
2. Value Addition and Business Development: NIF links innovators with scientific institutions for technical validation and refinement of their products. It also facilitates licensing agreements and helps set up micro-enterprises through its affiliate, the Grassroots Innovation Augmentation Network (GIAN).

The work of NIF and the Honey Bee Network has been transformative, giving visibility and voice to thousands of innovators. It has demonstrated that an institutional intermediary can effectively bridge the gap between informal creativity and the formal IPR system. However, the scale of the challenge dwarfs the capacity of these institutions. India has over 600,000 villages, and the reach of NIF, despite its best

[23] National Innovation Foundation, 'About Us' (NIF Website) https://nif.org.in/about_us accessed 5 September 2025.
[24] Honey Bee Network, 'The Philosophy' (Honey Bee Network Website) http://www.honeybee.org/philosophy.php accessed 5 September 2025.
[25] National Innovation Foundation - India, Annual Report 2024-2025 (Gandhinagar, Gujarat: NIF, 2025), 15. http://www.nif.org.in/document/annual-report-2024-25.

efforts, remains limited. There is a pressing need to move from this model of 'islands of excellence' to a more decentralised and systemic institutional architecture that can provide last-mile support to innovators across the nation. Awareness of NIF and its services remains low in many remote parts of the country, and a single, centrally-driven institution cannot single-handedly cater to the immense diversity of needs across India's vast geography.

VII. A PROPOSED FRAMEWORK: FROM JURISPRUDENCE TO PRACTICE

To truly unleash the potential of grassroots innovation, India needs to build a new jurisprudence-a philosophy of law and a corresponding set of practical tools-that is explicitly designed for this purpose. This requires a multi-pronged approach encompassing legal reform, institutional capacity building, and education.

A. Re-engineering Intellectual Property Rights

The cornerstone of this new framework must be the creation of legal instruments that fit the needs of grassroots innovators.

1. Recommendation 1: Introduce a Utility Model System.

The most critical legal reform would be the introduction of a 'utility model' or 'petty patent' system, which exists in countries like Germany, Japan, and China.[26] A utility model system would offer a second tier of patent protection with key differences:

- *Lower Inventive Step Requirement:* It would protect innovations that are incremental improvements rather than radical breakthroughs, fitting the nature of most frugal innovations.
- *Shorter Protection Term:* It would offer protection for a shorter period, such as 7-10 years, as opposed to the 20 years for a standard patent.
- Faster and Cheaper Registration: The registration process would be quicker and less expensive, often without substantive examination, placing the onus of proving invalidity on a potential challenger.

[26] World Intellectual Property Organization (WIPO), 'Utility Models' (WIPO Website) https://www.wipo.int/utility_models/en/ accessed 5 September 2025.

This would provide a rapid, affordable, and appropriate form of protection for systemic frugal innovations, empowering innovators to license their technology or secure funding with the confidence of legal ownership.

2. **Recommendation 2: Establish 'Innovation Promotion Vouchers'.**

To overcome the financial barriers, the government could introduce a voucher system. Grassroots innovators whose ideas are vetted by a designated authority (like a District Science Centre) could be issued vouchers. These vouchers could then be redeemed to pay for professional services, such as patent attorney fees for drafting and filing applications or fees for product testing and certification. This would empower innovators with choice and directly subsidise the most significant costs associated with formalising their work.

3. **Recommendation 3: Promote Pro Bono IP Legal Clinics.**

The government should incentivise law schools and corporate law firms to establish pro bono IP clinics dedicated to assisting grassroots innovators. This could be integrated into the curriculum for law students and counted towards Corporate Social Responsibility (CSR) mandates for firms. Such clinics would provide invaluable legal assistance, from prior art searches to application drafting, creating a human-resource pipeline to support the innovation ecosystem.

B. Strengthening the Ecosystem: From the Ground Up

Legal reforms alone are insufficient. They must be supported by a robust and decentralised institutional ecosystem.

1. **Recommendation 4: Create 'Gram Innovation Kendras' (Village Innovation Centres).**

The NIF model needs to be decentralised. We propose the establishment of 'Gram Innovation Kendras' at the district or block level, possibly housed within existing structures like Krishi Vigyan Kendras (Farm Science Centres) or local polytechnic colleges. These Kendras would serve as the first point of contact for innovators, providing:

- *Scouting and Documentation:* Actively identifying and documenting local innovations.
- *IP First-Aid:* Providing basic information about different types of IP and connecting innovators to pro bono clinics or NIF.
- *Linkages:* Connecting innovators to local fabrication labs ('fab labs'), mentors, and financial institutions like NABARD or micro-finance organisations.

2. **Recommendation 5: Develop a Sui Generis Framework for Community Knowledge.**

For Category 3 innovations, a unique legal system is required. This sui generis framework should move beyond the defensive posture of the TKDL. It should create positive rights for communities, allowing them to register their collective knowledge and traditions. The framework should establish clear rules for access and benefit-sharing, ensuring that any commercialisation of this knowledge by external entities requires the prior informed consent of the community and results in a fair and equitable sharing of profits, managed through a community trust or a similar body. This would align with the principles of the Nagoya Protocol on Access and Benefit-Sharing, to which India is a signatory.[27]"

3. **Recommendation 6: Foster Grassroots Micro-Venture Capital.**

A dedicated 'Grassroots Innovation Fund' should be established, possibly under the SIDBI (Small Industries Development Bank of India) umbrella. This fund would provide micro-venture capital-small tranches of high-risk funding-to help innovators move from a prototype to a marketable product. The investment decisions for this fund should be guided by experts with experience in rural markets and frugal innovation, not just traditional venture capitalists.

[27] Convention on Biological Diversity, 'The Nagoya Protocol on Access and Benefit-sharing' (CBD Website) https://www.cbd.int/abs/ accessed 5 September 2025.

C. Education and Awareness

A long-term strategy must focus on building a culture of innovation and IP literacy from the ground up.

1. Recommendation 7: Integrate Innovation and IPR into Education.

Basic concepts of innovation, problem-solving, and intellectual property should be integrated into the school curriculum, particularly in vocational training institutes (ITIs) and secondary schools. This would demystify IP and encourage young people to see themselves as potential creators and innovators.

2. Recommendation 8: Launch Local Language Awareness Campaigns.

Widespread awareness campaigns must be conducted in local languages, using accessible media like community radio, local newspapers, and folk performances. These campaigns should celebrate local innovators, explain the support systems available to them, and simplify the message of why protecting one's ideas is important.

VIII. CONCLUSION

India's landscape of grassroots innovation is a source of immense national pride and a powerful engine for self-reliant development. It represents a form of democratised creativity, a testament to the ingenuity that thrives in every corner of the country. Yet, for too long, this ingenuity has been left to fend for itself, celebrated in anecdotes but neglected in policy. The current jurisprudential framework, with its formal-sector bias, has proven to be a poor guardian of this precious resource.

The path forward requires a decisive shift in perspective-from viewing grassroots innovation as a curious anomaly to recognising it as a central pillar of our national innovation system. This calls for a new jurisprudence, one that is empathetic, accessible, and enabling. The recommendations outlined in this article-from introducing utility models and innovation vouchers to establishing decentralised Gram Innovation Kendras and creating *sui generis* protection for community knowledge-are not merely technocratic fixes. They represent a philosophical commitment to empowering the individual innovator and the creative community.

By building this supportive framework, we can help transition grassroots innovation from the world of *jugaad*-of transient, improvisational fixes-to a world of sustainable, scalable, and protected solutions. We can ensure that the creators of the next Mitticool or the next low-cost sanitary pad machine are not just celebrated as fleeting heroes but are empowered as entrepreneurs, capable of building enterprises that generate wealth, create jobs, and solve pressing societal problems. Fostering and protecting grassroots innovation is not just an economic imperative; it is a matter of social justice. It is about ensuring that the fruits of ingenuity are enjoyed by those who possess it, regardless of their location, education, or economic status. It is, in essence, about democratising the promise of innovation itself.

A. Research Questions

1. What are the defining characteristics and categories of grassroots innovation in the Indian context?
   - Grassroots innovation in India, often termed "jugaad," is characterized by frugal, functional, and context-specific creativity developed primarily by individuals and communities outside formal R&D structures. The article classifies grassroots innovation into three categories: (1) Improvisational Solutions (classic jugaad) which are temporary, makeshift fixes without scalability or IP interest; (2) Systemic Frugal Innovations that are structured, replicable, and scalable solutions addressing persistent problems with novel applications of resources; and (3) Codified and Community-Held Traditional Knowledge that includes collective, diffuse innovations passed through generations, such as herbal medicine and traditional agricultural methods. These categories reflect a spectrum from informal fixes to institutionalized, community-held knowledge requiring different support and protection modalities.
2. What are the limitations and challenges posed by the current Indian intellectual property laws to grassroots innovators?
   - The existing Indian IP laws-Patents Act, Designs Act, Copyright Act, and Geographical Indications-are largely inadequate for grassroots innovators.

Patents are costly, procedurally complex, and impose stringent novelty and inventive step criteria that often exclude frugal innovations perceived as obvious or incremental. Design registration protects only the aesthetic aspects, not functional innovation. Copyright protects expressions but not ideas or functions. Geographical Indications protect place-linked products but do not address individual or diffuse community-based knowledge. Additionally, prior public use risks, expense of legal representation, and statutory exclusions create formidable barriers for grassroots innovators to secure legal protection and commercialization opportunities.

3. How effective are current institutional supports like the National Innovation Foundation in promoting grassroots innovation?

- Institutions like the National Innovation Foundation (NIF) and the Honey Bee Network have been transformational in documenting, scouting, facilitating IP protection, and providing business linkages for grassroots innovations. NIF actively files patents on behalf of innovators, bearing the costs and providing technical validation and licensing support. These institutional intermediaries bridge the gap between informal innovators and formal markets/IP systems. However, their impact remains limited in scale given India's vast rural population and geographic diversity, with awareness and reach remaining low in many remote areas. The challenge is to move from isolated centers of excellence to a decentralized, scalable support architecture.

4. What legal and policy reforms can better encourage and protect grassroots innovation while ensuring equitable benefit-sharing?

- The article proposes a multi-pronged legal and policy reform framework including: introducing a second-tier "utility model" or petty patent regime to provide affordable, faster protection for incremental innovations; creating innovation promotion vouchers to subsidize IP filing and testing costs; promoting pro bono IP legal clinics to provide expert assistance; establishing decentralized Gram Innovation Kendras as local innovation hubs; developing a sui generis legal framework for protecting community-held traditional knowledge with clear access and benefit-sharing rules; and fostering grassroots

micro-venture capital funds to finance prototype-to-market transitions. Together, these reforms aim to create an enabling, accessible IP and institutional ecosystem that empowers grassroots innovators and community knowledge holders.

5. How can education and awareness contribute to fostering a culture of grassroots innovation?

- Education and awareness are crucial for nurturing a sustainable grassroots innovation ecosystem. Integrating basic concepts of innovation, problem-solving, and intellectual property rights into school and vocational curricula demystifies IP and encourages youth to perceive themselves as potential innovators. Conducting local language awareness campaigns via accessible media, such as community radio and folk performances, helps inform and motivate innovators about available support systems and the importance of protecting and commercializing their ideas. Such educational initiatives build a culture of innovation and IP literacy from the ground up, essential for sustaining and scaling grassroots creativity.

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