

Geographical Indications, Traditional Agricultural Knowledge and Farmers' Rights Emerging Legal Challenges in India

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Abstract

Geographical Indications (GIs) are important to ensure the reputation, quality and distinctive character of agricultural products originating from a particular geographic area. The opportunities provided by GI protection in India are significant in the context of traditional knowledge, traditional practices and community-based seed conservation which are integral to agriculture. The connection between geographical indications, traditional knowledge from farmers and their rights, however, introduces several legal and socio-economic issues. This paper critically looks at the Indian legal regime relating to geographical indications with specific focus on the Geographical Indications of Goods (Registration and Protection) Act, 1999, the Protection of Plant Varieties and Farmers' Rights Act, 2001, and the relevant international IP instruments. It examines whether current legal instruments provide sufficient protection of farming communities, repercussions of traditional agricultural knowledge from misuse, and a fair distribution of economic benefits from the recognition of GIs. The study also examines the challenges to collective ownership, the registration process, enforcement, market access, commercialization and involvement of small and marginal farmers in the value chain associated with GIs. Special focus is placed on the disparity between recognition and realisation of farmers' socio-economic interests. Based on the doctrinal and socio-legal approach, the paper assesses the effectiveness of the existing protections and the opportunities for enhancing community participation, the institutional accountability and benefit-sharing mechanisms. It calls for a GI protection to go beyond product identification and market differentiation and to promote inclusive rural development, agricultural biodiversity and intergenerational transmission of TK. The paper outlines specific proposed legal and policy changes to create a more balanced regime that would balance the rights of farmers with IPR rights and sustainable development and cultural heritage in India.

Keywords: Geographical Indications; Traditional Agricultural Knowledge; Farmers' Rights; Intellectual Property Rights; Agricultural Biodiversity.

1. Introduction

In India, agriculture is not just a livelihood but also a storehouse of cultural identity, traditional knowledge, and experience of the environment and community-based innovations. Farmers have also evolved specific techniques in cultivating the crops, selecting seeds, irrigating, harvesting and processing the produce which are specific to the localities and the culture they have brought on them. The practices are taken up in agriculture and help to create the special

qualities of agricultural products and often their reputation in domestic and international markets. The link between a product and its geographical origin can be acknowledged and safeguarded via a legal framework called a Geographical Indications (GI). They are able to support the recognition of the agricultural products of the region, maintain their reputation and provide opportunities for farmers in the countryside to receive more recognition for their expertise and traditional knowledge.

It is in situations where the agricultural products are gaining reputation through a combination of human skills and geographical factors that the importance of GIs becomes apparent. The characteristics of a product may be affected by the combination of soil composition, climatic variations, rainfall, altitude and traditional cultivation practices and the knowledge of the community. At such times, geographical identity turns into an economic and cultural worth. But the legal designation of a product's geographical origin does not guarantee that the farmers responsible for ensuring the distinctive qualities of the product benefit from a fair share of the commercial value of the product. Despite the registration of a product as a GI, producers might still lack some bargaining power, access to markets, and information on their legal rights and the potential for exploitation.

This is particularly important in India due to its geographical diversity and rich agricultural practices. The reputation of the geographical location can be valuable intellectual property as evidenced by the products like Darjeeling Tea, Basmati rice and agricultural produce from the geographical region. However, community groups that stand to gain from traditional cultivation practices may not always have enough financial means, institutional voice or technical expertise to reap the full benefits of legal protection. A more in-depth analysis of the relationship between the GIs and farmers' rights should therefore be made beyond the issue of registration and commercial branding.

The knowledge of farmers and traditional extension practices are often passed down from one generation to the next by practice, word of mouth and community involvement. Instead of being based on specific legal requirements like originality, inventiveness or novelty, which are typically required for conventional IP rights, knowledge is accumulated over a long time in the case of TK. It can be owned by small and marginal farmers, indigenous people, women cultivators and local farmer organisations. Legal protection of these knowledge needs to be designed in a way that is both respectful of the collective nature of the knowledge and does not prevent communities from continuing their customary agricultural practices.

This article explores the link between geographical indications and the rights of the farmers in the Indian legal framework with respect to the traditional knowledge and farmers' rights. It reviews the pertinent legal framework, examines the future issues of ownership, commercialization and benefits sharing, and discusses the contribution of international IP law. The main thesis is that the protection of the GI is to be looked at as part of a wider framework for agricultural justice. Effective protection will require consideration of geographical reputation and a meaningful role for the community, transparent economic terms and access to remedies and safeguards for TK and agricultural biodiversity.

2. Legal and Institutional Framework on Geographical Indications and Farmers' Rights in India

The main Act with regard to geographical indications in India is the Geographical Indications of Goods (Registration and Protection) Act, 1999 and the Rules for registration and protection under the Act, 2002 are known as Geographical Indications of Goods (Registration and Protection) Rules, 2002. The Act provides a system for the registration and protection of indications that are linked to goods which have a geographical origin that substantially affects their qualities, reputation or other characteristics. It protects geographical identity by offering legal recognition of it, and it aims to stop any infringement, which might lead consumers to believe that the use is approved or authorized, or to unfairly take advantage of the protected product's reputation.

The geographical indication can be used for agricultural, natural or manufactured products, according to the Act. For products of agriculture, geographical origin can affect the quality and reputation of the product due to both environmental and traditional production factors. Registration allowed, authorised users to create their right to use the registered indication in compliance with the relevant legal provisions. The framework also offers remedies for

infringement and in specified circumstances, misleading or unfair commercial use. The collective nature of GI protection sets it apart from the intellectual property rights which are normally granted to one or more individuals or businesses who are the inventors.

Section 11 of the GI Act deals with the applications for registration and Section 17 deals with registration of the authorised users. The rights given by registration are detailed in section 21, including the rights of registered proprietors and registered users in accordance with the law. The provisions are significant because GI protection does not just consist of an indication or a product being given a commercial name, it is a legal framework that allows the use and protection of a qualifying indication related to a specific region.

However, institutional capacity is a key determinant in implementing the GI framework. The producer organizations have to be capable of defining the eligible products, define the geographical connection, prepare the required documents, uphold the production standard and ensure adherence to the registered specification. Such processes may be burdensome to rural communities, especially in their financial and administrative capacity. Therefore, the utility aspects of the registration process may as much relate to the support provided after the registration, as to the actual registration itself.

The Protection of Plant Varieties and Farmers' Rights Act, 2001, is another aspect of India's IP regime. It provides for plant variety protection, and it includes farmer specified rights and interests. It covers topics such as the protection of certain traditional agricultural contributions, benefit sharing and farmers rights, as well as plant variety protection. Of particular importance is the right of the specified farmers to save, use, sow, resow, exchange, share or sell their farm produce, including their seed of a protected variety, as provided in section 39, with the proviso in respect of the right to sell branded seed of the protected variety. The Act also includes provisions on the recognition and reward to the farmers for their contribution towards the conservation and improvement of plant genetic resources.

The GI Act and the PPVFR Act have different legal interests, and can complement each other. While the GI protection focuses on the relationship of the product and its place of origin, plant variety protection is related to the registration and the protection of qualifying plant varieties and the rights that are granted by the statute. There is no automatic right of ownership of a plant variety that comes with a GI registration and no automatic right to royalties or compensation belongs to any one farmer. In parallel, the protection of all GIs and TAs under the PPVFR Act does not depend on farmers' rights being recognized.

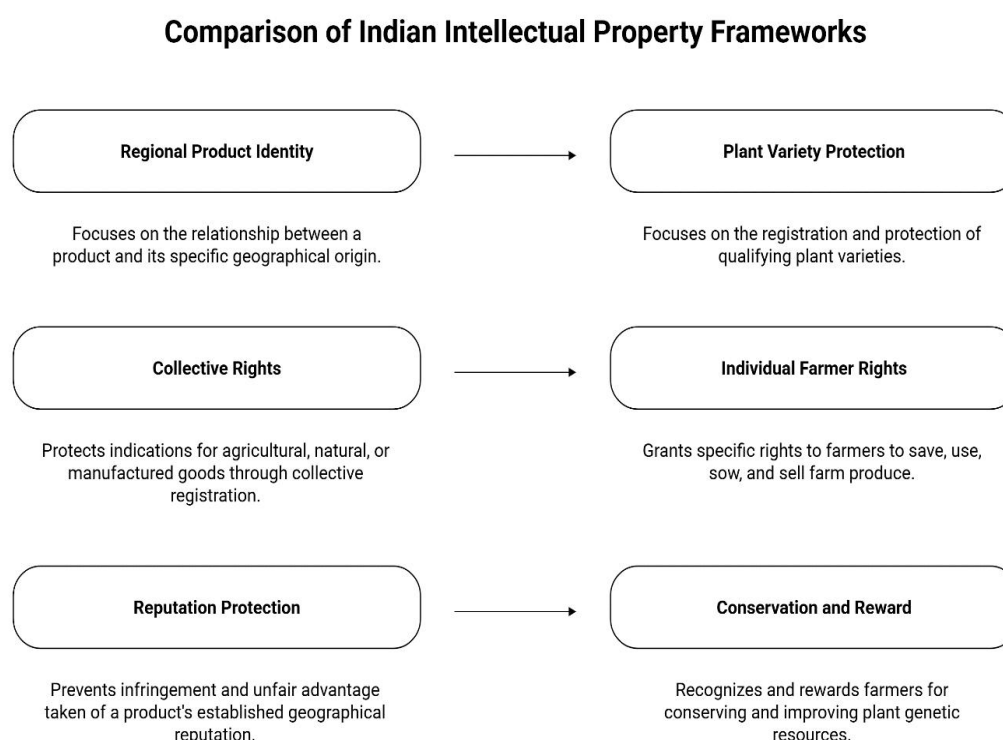


Fig.No.1 Comparison of Indian Intellectual Property Frameworks

Source: Author's own creation

The legal system needs to be understood in a harmonized way, taking into account geographical reputation, plant variety protection, TK and community interests. More effective institutional coordination may assist in making producer organisations aware of the protection they have at their disposal, and in identifying the overlaps and how other legal mechanisms can be leveraged without creating undue barriers to customary farming.

3. Traditional Agricultural Knowledge, Indigenous Practices and Community-Based Intellectual Property Protection

Traditional agricultural knowledge is also a valuable type of collective intellectual property that is the product of community generations of working with their natural environment. It entails information about seed selection, crop rotation, mixed cropping, soil fertility, water conservation, pest management, harvesting, indigenous plant preservation and storage. This type of learning can be localized and incorporated into the sustainable development of agricultural practices. In several Indian villages, farmers have unique agricultural practices which affect the quality, nature and reputation of the geographical origin products. The maintenance of this knowledge is thus strongly linked to the ongoing authenticity of the products that are safeguarded by geographical indications.

The link between traditional agricultural knowledge and GIs is important as geographical reputation is often dependent on human factors besides natural conditions. Section 11 of the GI Act requires an applicant to establish the geographical connection and the relevant qualities, reputation or characteristics of the goods. The provision takes account of the importance of the geographical environment such as natural and human factors in determining whether a product is eligible for registration.

This framework offers a foundation to support the valuation of traditional agriculture to make region-specific products. However, documentation of such practices could be challenging if knowledge is passed verbally or in a group or through customary methods and not written down.

Identification of legitimate representatives of TK is one of the challenges. Agricultural knowledge can be co-extensive with multiple villages, communities or generations, and may be hard to identify who or what should be the representatives of the respective knowledge holders in registration and enforcement processes. A farmer can be a member of a producer association, and the association may be legally recognised as an applicant but this does not necessarily result in a farmer having an effective voice in the producer association. Where a geographical indication is legally recognisable, there should, therefore, be clear procedures for community representation, consultation and for holding communities to account.

The connection between GI protection and traditional knowledge also opens up issues related to the protection of traditional knowledge that are prior to the formal rights of IP. Other IP rights, such as novelty or individual inventorship may not be met with traditional farming methods. The value may be a collective, experimental, adaptation and transmission over the course of time. Thus, patent law or other traditional IP rights might not serve the collective interests of farmers. GIs can provide an alternative form of protection to the geographical reputation but not exclusive rights to all the associated agricultural knowledge.

India has several complimentary systems in place for its legal protection of traditional knowledge, which have varying fields of application. The Biological Diversity Act, 2002 (as amended) covers issues of conservation of biological diversity and access to biological resources and associated knowledge. The PPVFR Act acknowledges some farmers' contribution to the conservation and improvement of plant genetic resources and the GI Act offers protection to the QPs giving protection to the QGIs. These frameworks are not meant to be used in replacement of each other. Being registered as a GI is not enough to mean that the biological resources or their use are owned by the product, that there is a patent for traditional uses or that any and all use of the associated knowledge automatically means that benefits will be shared with the owner.

International instruments also highlight the role of farmers' contribution. Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture provides for farmers' rights such as the protection of traditional knowledge associated with plant genetic resources, fair sharing of benefits and the right to participate in the decision-making process on conservation and sustainable use. It puts the responsibility on the national governments to fulfil these rights, subject to national legislation and appropriate measures.

Protection must, therefore, extend beyond being formally registered. It should facilitate documentation of traditional agriculture knowledge, with consent of the community, ensure appropriate confidentiality when required, consolidate the institutions of the local producers, and avoid commercial appropriation without the consent of the community. Protection, on the other hand, should not become an instrument which restricts the use of seeds for exchange or the passing down of farming methods, and which is becoming an asset to farmers rather than a benefit. A balanced approach would maintain the collective nature of TK while preventing that commercialization of TK would unfairly exclude communities in which it was developed.

4. Opportunities and limitations of Geographical Indications and Farmers' Socio-economic Empowerment

The socio-economic empowerment of farmers can be fostered through the use of geographical indications to give products a competitive edge in the market and to establish a reputation for products from a specific geographical area. Recognition can help producers to effectively promote the origin, unique characteristics and values of their products. In places where the authenticity and traceability of products is valued, GI protection may be able to help differentiate products, help to promote premium pricing, and provide opportunities for rural enterprises. It can also help to foster tourism, regional branding and processing and marketing opportunities.

The case of Darjeeling Tea is a good example of how geographical identity plays a crucial role in the recognition of an agricultural product for trading purposes. It is closely associated with the geographical conditions and the traditions of production of the Darjeeling region. Likewise, Basmati rice exemplifies the significance of geographical reputation, agricultural expertise and to be known in international market. The following examples illustrate some of the ways in which geographical identity can be an economic asset, although the benefits enjoyed by individual farmers will be dependent on production arrangements, market structure and market access, and compliance costs. Registration can do nothing to prove an increase in farmers' income or equitable distribution of benefits.

GIs also have economic potential, especially for small and marginal farmers who often have challenges to access larger markets on their own. Collective branding can sometimes help to increase visibility and offers a negotiating advantage to producers with traders, processors and retailers. A known sign can also help to raise awareness of quality control and maintenance of traditional production techniques. The benefits are potential, however, and do not automatically occur. The farmers can sell their products to the intermediaries who have more bargaining power and the most significant commercial benefits can be gained by processors, exporters, marketers or retailers.

This is because the importance of product recognition and producer empowerment are at the heart of the effectiveness of GI protection. The market might be well recognized and the farmers cultivating the product might be receiving only a token amount of the final selling price. Small producers might struggle if the certification and quality control, packaging, storage and transportation expenses are steep. They might also face limited access to commercialization opportunities based on GIs due to inadequate infrastructure and limited access to market information. Therefore, when evaluating the effectiveness of the GI, producers' income, price realization and their decision-making role, markets and value distribution along the chain should be taken into account.

Secondly, there is a restriction on the structure of collective representation. Under the GI Act, registration is allowed for a group of persons or producers associated with each other or other similar qualified institutions representing producer's interests.

This can help to ensure collective protection, but the interests of farmers in a region may not be the same. Participation can be affected by landholding size, production size, availability of irrigation, gender, caste, financial resources, and location of markets. Small groups of powerful stakeholders may control producer organizations, leaving poor farmers out of decision-making processes on product requirements, marketing and use of collective resources.

Particular attention must be paid to women farmers in this aspect, as they can be the subject of non-recognition in formalized producer organizations for their role in seed selection, post production and food preservation processes and traditional agricultural knowledge. Women who are not landowners or formal members of a cooperative association, but are involved in

agricultural production, might be allowed less opportunities to be granted authorized user status or to access institutions related to a GI. Empowerment thus needs to be built on actions which will facilitate meaningful participation, not just the formal establishment of a registered organisation.

However, the disadvantages of GI protection are also that it can be overt commercialised. Requirements for standardization and market-oriented production may lead to innovations in traditional practices or to a selection of those producers who are able to make the investment. Sometimes, the need to boost production can be at the expense of biodiversity, soil health or traditional crops. The evaluation of GI-based development, therefore, should be done not only in the context of sustainable agriculture, but also in the context of cultural preservation and rural welfare.

The key policy interventions are to ensure that producer registrations are linked with producer training, cooperative development, availability of credit, storage facilities, and digital marketing and value chain arrangements that are transparent. Authorised user registration should be understood by farmers and institutional support should be provided to enable farmers to be effective in collective management. Regular assessments should be used to measure the positive influence of GI recognition on livelihoods, support traditional knowledge systems and ensure equitable and fair distribution of economic benefits.

5. New legal issues: Misappropriation, collective ownership, enforcement and equitable benefit sharing

A key issue with geographical indications and traditional agricultural knowledge is the unauthorised use of traditional knowledge or geographical names and their reputations. Failure to comply with specific protected geographical indication requirements when marketing agricultural products can lead consumers to believe the products are not genuine and to the detriment of the rights of the true producers. These practices could jeopardize the credibility of a GI, and decrease the value of investments that farming communities make in ensuring the quality of their products. While the GI Act offers a legal mechanism for the protection of registered indications and the remedy for infringement, specific resources, legal enforcement and market surveillance are needed for effective enforcement.

In this context the international framework as per the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is relevant. Geographical indications are defined in Article 22, as goods whose quality, reputation or other characteristics are substantially due to the geographical place of their origin. It calls on the members of the WTO to take measures to prevent deceptive practices and unfair competition. The protection for geographical indications for wines and spirits is provided under Article 23, subject to the provisions of the Agreement.

It can be especially challenging for Indian agricultural communities to enforce cross-border. The protection for a registered GI does not necessarily extend to all foreign markets. Producers may be subject to registration and enforcement obligations of relevant jurisdictions, may have to seek recognition if any through international mechanisms or may have to deal with misuse under foreign laws. These processes may be costly and technically demanding and can make small producer organizations less competitive than large commercial organisations. Enhancing international cooperation and offering legal support to producer groups are thus essential elements in good protection.

Legal GI Challenges

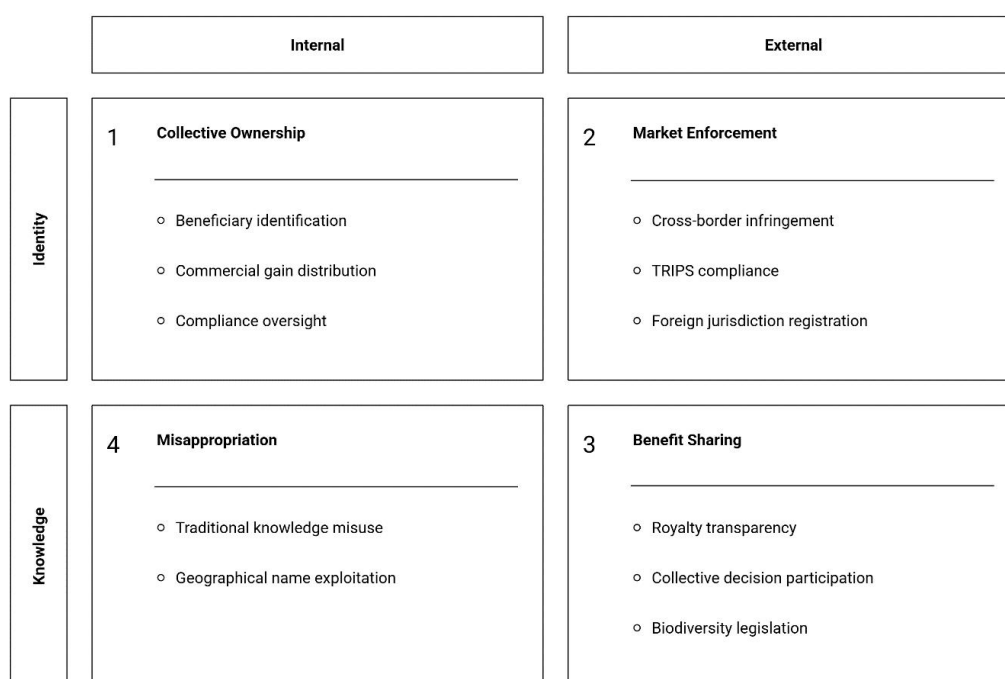


Fig.No.2 Legal GI Challenges

Source: Author's own creation

Another issue relates to the difference between misappropriation of traditional knowledge and mis-use of a geographical indication. The use of traditional agricultural knowledge does not require the business to claim that it is using the knowledge of the product's geographical origin when it is not. On the other hand, a trader can use a protected geographical name without taking possession of the traditional knowledge. These are two separate scenarios, and may call for different remedies. The main protection offered by the GI law is for the geographical identity and the geographical reputation; the ownership of all traditional practices used in the production of the goods is not fully guaranteed. In cases where the underlying problem is access to biological resources (plant varieties or associated knowledge), other law may be applicable.

Collective ownership is another difficulty. The primary movement of the GI protection is the collective reputation of a product, and the interests of qualified producers. But identification of beneficiaries and distribution of commercial gains might be controversial. Issues may emerge on how to include certain producers in the use of the indication, how production specifications should be developed, who should oversee compliance and how conflicts between producers should be settled. But if there are no clear processes to manage these issues, the registration of GIs can lead to internal inequalities instead of to collective empowerment.

When TK is used in the creation of a product that has a commercial value, then it is important to consider benefit sharing. The granting of a geographical indication does not per se guarantee an automatic right to receive a royalty for every farmer that has participated in the development of the product in the past. Transparency in accounting, traditional knowledge holders' participation in collective decisions and fair representation are thus critical for ensuring equitable benefit sharing, and must be carefully designed. Appropriable benefits may also derive from the use of plant genetic resources, and subsequently relevant may be the legislation on biodiversity and plant genetic resource. While the International Treaty on Plant Genetic Resources for Food and Agriculture provides key principles regarding the role of the farmers in relation to benefit sharing and participation in decision-making, this should not be interpreted as an automatic right of individual farmer to receive payments for genetic resources registered as a GI.

A new topic that has come to the fore is the "digital marketplace. Agricultural producers can connect with consumers through online platforms, yet it can also be difficult to get the right product description, as well as imitating existing brands and using geographic names without

permission. Small producer groups may not have the technical skills to keep track of online listings, to keep a record or to file a cross-border complaint. Digital Marketing can also extend the farmer-consumer gap and more value could be squeezed from the farmer by the intermediaries in the recognition of GIs.

Another legal/policy issue is climate change. The nature of agricultural products and the sustainability of traditional production systems could be influenced by shifts in rainfall, water and soil availability and temperature. When the reputation of a GI relies on certain environmental conditions, shifts in climate can make it more difficult to maintain the conditions required for product specifications and can cause uncertainty for farming communities. Adaptation strategies will therefore have to maintain the essential features of the indication, while maintaining scientifically sound responses to varying environmental conditions.

The problems that these challenges have brought to light indicate that the protection system needs to be more integrated. There is a need for legal reform that can clarify the relationship between GI rights, the safeguards for TK and the farmers' rights and the regulation of biodiversity. Enforcement mechanisms should be available to small producer groups and institutional governance should be transparent, inclusive and accountable. Last and foremost, there is a need to separate farmers' social, economic and cultural interests from protection of commercial reputation in GI policy.

6. Judicial and International Perspectives on Geographical Indications, Traditional Knowledge and Farmers' Rights

The interpretation of the courts in practice has a great bearing on the extent to which IP rights are afforded and on how these rights intersect with farmer's customary practices. Indian courts have considered problems in connection with geographical identification, the commercial reputation of products, problems of enforcement of intellectual property rights, farmers rights etc., all under different statutory frameworks. It is therefore critical that judicial interpretation be able to differentiate between disputes arising under the GI regime and disputes relating to plant variety protection and/or the interests of agricultural communities as a whole.

In *PepsiCo India Holdings Pvt. Ltd. v. Kavitha Kuruganti (9 January 2024)*, the Delhi High Court Division Bench provides a pertinent example of the interplay between plant variety protection and farmers' rights. It was related to the registration of potato variety and lawful provisions of PPVFR Act, 2001. The case is important for the current debate as it exemplifies the importance of considering plant breeders' rights in conjunction with the statutory rights of farmers. It is not a GI infringement judgment, nor is it a comprehensive study of the geographical indications regime, but it serves as a comparative example to how things work through other intellectual property rights.

Judicial interpretation is important not only for resolving cases, but for its significance in the broader scheme of things. Courts might have to determine whether the registration is valid, the extent of statutory rights, if commercial conduct infringes protected interests and if appropriate remedies are available. In the context of disputes in the field of GI, there may be questions about the use of geographical names, the representation of the origin of the product, the eligibility of the producers and the enforcement of registered rights. Clear statutory standards, reliable evidence and the capacity of affected producer communities to gain access to judicial proceedings are essential for effective judicial protection.

The TRIPS Agreement in international context sets minimum standards for the protection of geographical indications. Part of the protection of GIs, along with certain exceptions, are discussed in articles 22-24. The innovative aspect is Article 22's focus on preventing misleading uses and unfair competition, and Article 23's provisions for better protection of wines and spirits. The actual form of protection for agricultural producers can differ from country to country, due to the flexibility of the international framework on protection.

The International Treaty on Plant Genetic Resources for Food and Agriculture provides an alternative, complementary view, focusing on farmers' rights and their relation with plant genetic resources. Farmers' rights include the protection of TK, equitable benefit-sharing and participation in decision-making as highlighted in Article 9. It also acknowledges the duty of the national governments to take appropriate measures as per the national law.

The International intellectual property system is still disjointed. There are multiple purposes and legal applications for GI protection, plant variety protection, and biodiversity

regulation and traditional knowledge protection. The geographical reputation and Protected plant varieties, as well as the traditional cultivation methods and biological resources used in agriculture, can be linked to a single agricultural product, but none of the legal mechanisms protects all these interests. The key question is how to coordinate the various regimes to the extent that it is possible without mixing up their purposes or producing unnecessary and unjustified restrictions on farmers.

This coordination can be enhanced in India through more legal awareness, by enabling cooperation between the relevant authorities and by providing guidance for the producer organizations in an accessible manner. The differences between GI registration, authorization of users, plant variety protection and relevant biodiversity obligations should be explained in training programmes. Communities should also have access to legal aid and institutional support when their rights are infringed or exploited commercially without their permission. Judicial and administrative processes need to be sensitive to the collective nature of TK and the constraints faced by small farmers.

A balanced approach should also take into account that international commercial protection and domestic agricultural justice do not conflict with one another and are not mutually exclusive goals. Improved market position of a regional product through greater international recognition can only complement good governance at a local level and equitable participation and distribution of benefits. International standards need to be applied in ways that will ensure protection of the geographical reputation and that will respect the "legitimate interests" of farmers with respect to traditional knowledge, agricultural biodiversity and sustainable production.

7. Strengthening Legal Protection and Policy Mechanisms: Towards Inclusive and Sustainable Agricultural Development

The connection between GI protection and farmers' rights needs to be strengthened by crossing the boundaries of a registration-centred approach to a more inclusive community-based governance model. While registration is of crucial importance, the economic potential of a geographical indication relies on product quality, efficient enforcement and consumer participation and fair distribution of economic opportunities. Legal and policy instruments should thus not be limited to addressing the protection part of the GI lifecycle, but rather should permeate the whole GI lifecycle, from product identification, documentation of the geographical link, monitoring, dispute resolution and outcomes evaluation for farming communities.

In the first place the capacity of the producer organizations needs to be enhanced. Practical support should be provided for farmers to prepare geographical and technical documentation, to keep production standards and apply for the authorization of the user. Guidance on farmland lease agreements can be offered by government agencies, agricultural universities, legal services institutions and producer cooperatives in cooperation, and at low cost. This would make GI protection available to a few well-resourced organisations.

Second, there is a need to establish transparent governance and accountability in GI producer organisations. Meaningful participation in decision making procedures should be offered for small and marginal farmers, women cultivators and knowledge holders of traditional knowledge. It is important for organizations to keep easy-to-access membership, production quality, expenditure and collective marketing records. If the use of the collective branding derives commercial revenues, the use should be regulated by transparent arrangements, which take into consideration the interests of the involved producers. This would increase trust and ensure that elite capture is less likely to occur.



Fig.No.3 Strengthening GI Protection and Policy

Source: Author's own creation

Third, there are to be easily accessible enforcement options for legal protection. Small producer groups might not be able to contest the use of a protected geographical indication against traders or businesses that use it illegally in costly litigation. These barriers can be mitigated by providing legal aid, streamlining complaints and processes, helping with gathering evidence and coordinating among enforcement bodies. Digital systems for monitoring may also allow to detect fraudulent internet postings and commercial unauthorisations, as long as the monitoring systems are low cost and readily available to rural organisations.

Fourthly, better coordination needs to be achieved between the GI Act and the PPVFR Act and relevant biodiversity legislation. There is a need for clear guidance to differentiate between geographical reputation and plant variety rights and protection of traditional knowledge. Farmers should have an understanding of the legal provisions that would apply to a specific dispute, as well as the need for further procedures for the protection of any additional biological resources or traditional practices that they are involved in. More coordination can eliminate uncertainty and avoid having one level of IP protection stymie another valuable agricultural interest.

Fifth, the safeguarding of TK ought to be done in collaboration with the community and in a protective manner. Documentation might be used to set out the history and particular features of farming practices, to help crafting of applications for GIs and to minimise some types of misappropriation. But documentation should not be a prerequisite to making "sensitive" knowledge readily available for commercial use. The communities should be consulted and have a say in what information can be captured, how it could be accessed and under which circumstances it could be used. The creation of traditional knowledge databases (where applicable) should preserve and complement, rather than replace, the rights and interests of the knowledge-holding communities.

Sixthly, benefits from commercialization should be tied to the source of actual benefits. If demand is increased and/or producer organizations achieve better prices or access to new markets because of the GI, they should consider whether the benefits are shared along the value chain. If benefits are derived from the use of biological resources or from plant genetic resources, these should be evaluated in the respective statutory and international frameworks. This would prevent the erroneous notion that GI registration is the source of royalties, and promote fairer and more transparent commercial agreements.

Seventh, there is a need to integrate environmental sustainability and climate adaptation in agriculture and other development strategies, based on GIS. Water saving organizations and agricultural institutions should promote water saving, soil management, preservation of

biodiversity and appropriate traditional cultivation. Any changes to production methods should be carefully evaluated to make sure that they do not affect the qualities or reputation of the product that support its protection as a GI. Meanwhile, production specifications need to be capable of appropriately adapting to the environment, with legal and evidence-based means.

8. Conclusion

Geographical indications, traditional agricultural knowledge and farmers' rights are elements that are interrelated in the agri-cultural and intellectual property rights regime in India. Geographical indications offer a legal means for safeguarding the reputation, distinctive characteristics and geographic source of products linked to specific geographic areas, while traditional agricultural knowledge are the experience and collective contributions of agriculture communities. The rights of farmers are then vital to securing meaningful engagement of the communities that safeguard agricultural heritage in the benefits that flow from its recognition and commercialization. While India's GI Act, 1999, and PPVFR Act, 2001, provide important safeguards, the interaction between the two legal regimes needs to be further explored for institutional co-ordination, practical implementation and fair participation.

Formal recognition of the rights of farmers and their socio-economic interests, as opposed to their actual realization, is the core issue. The registration in GI may help to boost the market image of the product but does not always lead to better income, bargaining power or legal awareness of small and marginal farmers. Likewise, the inclusion of traditional agricultural practices in the Convention does not ensure that they will not be claimed by anyone else or that the communities who continue to use them will derive any commercial advantage from their use. They highlight the need for effective institutional support, transparent producer groupings, accessible legal remedies and the other necessary elements of IP protection.

A holistic approach should view farmers not only as producers of agricultural products but as holders of traditional knowledge, contributors to plant genetic resource conservation and as actors in sustainable agriculture. Legal and policy reform is needed to enhance community representation, advance coordination among existing statutory policies and practices and increase the availability of GI protection and support for the conservation of agricultural biodiversity. Special emphasis should be placed on the contribution of women farmers, and disadvantaged rural communities, which may be under-represented in formal processes for decision making.

Finally, the potential of geographical indications should be evaluated not only on the basis of the protection of a regional name or the growth of agricultural markets, but also in terms of the effects on rural justice, continuity and sustainable livelihoods. India needs to create a more participative approach towards GI governance to balance the interests of farmers with IP rights. This could be a way to make geographical indication a meaningful tool for the protection of traditional agricultural knowledge, good support for farmers' rights and fair and sustainable agricultural development.

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