

Biopiracy from the Social Network Perspective: Rethinking the Legal Protection of Genetic Resources and Traditional Knowledge via Social Network Analysis

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論 文 名 : **Biopiracy from the Social Network Perspective: Rethinking the Legal Protection of Genetic Resources and Traditional Knowledge via Social Network Analysis**
(ソーシャルネットワークの視点から見たバイオパイラシー：ソーシャルネットワーク分析を通じた遺伝資源および伝統知識の法的保護の再考)

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論 文 内 容 の 要 旨

Biopiracy is characterized by its multifaceted nature, entwined with broader challenges faced by indigenous and local communities such as resource mismanagement and neo-colonial exploitation of natural and biological resources. This dissertation investigates the intricate legal and social network dynamics of biopiracy, particularly focusing on the misappropriation of genetic resources and traditional knowledge belonging to indigenous and local communities and on the patenting of these resources or their derivatives. It critically evaluates the legal frameworks developed to combat biopiracy at both international and national levels and ensure prior informed consent for access to genetic resources and traditional knowledge and fair and equitable sharing of benefits arising from their commercialization. The analysis categorizes anti-biopiracy measures into four mechanisms: access and benefit-sharing regimes, intellectual property rights protection, mandatory requirements of disclosure of origin in patent applications, and documentation practices of traditional knowledge. A critical examination reveals significant challenges, such as the ineffective enforcement of access and benefit-sharing agreements across complex networks and the limited reach of legal protections as the number of intermediaries between original resource providers and commercial users increases. The transformative nature of genetic resources and traditional knowledge exacerbates these issues, often disconnecting these resources from their original providers.

This dissertation pioneers a social network perspective on biopiracy, aiming to uncover the underlying mechanisms and dynamics driving this practice. Employing a comprehensive methodology blending doctrinal legal research with empirical analysis using social network analysis, it explores the interplay between existing legal protection mechanisms against biopiracy and social networks involved in the dissemination of genetic resources and associated traditional knowledge. Through meticulous examination of the network structures of 30 past biopiracy cases from South and Southeast Asia, Latin America, and Africa, it unveils the average distance between the nodes previously accused of biopiracy and the nodes that correspond to the origin of the genetic resource and associated traditional knowledge in question. The analysis also identifies key nodes susceptible to engaging in biopiracy, offering

insights crucial for designing effective anti-biopiracy policies. The dissertation's originality lies in applying social network analysis to past biopiracy cases, identifying key patterns in the dissemination networks of genetic resources and traditional knowledge. Findings indicate an increase in intermediaries, reducing the effectiveness of legal protections and increasing the risk of biopiracy. The study proposes a theoretical framework for social network-based anti-biopiracy policies, offering a dynamic and objective tool for policymakers. Recommendations include strict enforcement of existing legal measures, comprehensive data collection, and regular updates to network analyses to adapt to evolving networks involved in the dissemination of genetic resources and traditional knowledge.

By bridging legal scholarship on biopiracy with social network theory, the research not only expands the understanding of biopiracy but also provides a foundation for informed policy interventions aimed at preserving biodiversity, protecting traditional knowledge of indigenous and local communities, and fostering prior informed and fair equitable benefit-sharing for the use of these valuable resources. Thus, the dissertation contributes significantly to both academic and practical efforts toward sustainable resource management and social justice.