

Science Diplomacy



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SPECIAL ISSUE
**WIPO Treaty on Intellectual Property,
Genetic Resources and Associated
Traditional Knowledge**

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Editorial //////////////////////////////////////

Each year on 26 April, we observe World Intellectual Property Day, founded by the World Intellectual Property Organization (WIPO) in 2000. WIPO, created in 1967 as a specialised agency of the United Nations, plays a crucial role in promoting and safeguarding intellectual property (IP) worldwide. Headquartered in Geneva, Switzerland, WIPO facilitates global cooperation among its 193 member states and international organisations to enhance IP protection and regulation.

This year, a significant milestone was achieved at the Diplomatic Conference held in Geneva from 13 to 24 May 2024, with the adoption of the WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge. Over 150 countries agreed on this Treaty, which addresses the complex issues at the intersection of the patent system and genetic resources, including traditional knowledge linked to them.

The April-June 2024 issue of *Science Diplomacy* highlights this groundbreaking Treaty, which was developed over more than two decades. The Treaty requires patent applicants, such as foreign entrepreneurs or international companies, to disclose the sources of their products, especially those derived from indigenous or local knowledge. Genetic resources, found in medicinal plants, agricultural crops and animal breeds, are increasingly used in various industries such as cosmetics, seeds, medicines, biotechnology, and food supplements.

The Treaty consists of 22 articles covering objectives, definitions, disclosure requirements, governance, and implementation principles, providing a comprehensive framework for managing IP related to genetic resources and traditional knowledge.

BRIEF OVERVIEW OF ARTICLES	
Article 1	outlines the Treaty’s primary objectives of enhancing the effectiveness of the patent system and preventing erroneous patents
Article 2	defines key terms used throughout the Treaty
Article 3	requires patent applicants to disclose the country of origin of genetic resources or the source of traditional knowledge associated with them
Article 4	ensures the Treaty’s obligations do not apply retroactively
Article 5	describes sanctions and remedies for failures in disclosure
Article 6	encourages the creation of accessible information systems for genetic resources and traditional knowledge
Article 7	ensures compatibility with other international IP agreements
Article 8	commits to periodic review of the Treaty’s scope, content and rules
Article 9	establishes general principles for implementing the Treaty

Article 10	describes governance through an assembly of representatives from contracting parties
Articles 11-13	cover administrative functions of the International Bureau, eligibility to become a party to Treaty, and procedures for ratification and accession
Articles 14-16	detail mechanisms for Treaty revision, amendments and the signature process
Article 17	specifies the Treaty's effective date, three months after 15 eligible parties deposit their instruments of ratification or accession
Articles 18-21	address topics including becoming a party, denunciation, reservations, and languages used in the Treaty

The Treaty marks a global commitment to balancing IP rights with biodiversity conservation and protecting traditional knowledge held by indigenous peoples and local communities. It includes provisions for periodic reviews and amendments to address emerging technologies and broaden the scope of disclosure requirements, reflecting ongoing advancements and challenges in IP law and biodiversity conservation.

The Treaty is unique for its focus on genetic resources and traditional knowledge, transparency, ethical considerations, promotion of international cooperation, and adaptability to future challenges. It represents a significant step towards ensuring that IP rights contribute to sustainable development and equitable benefit-sharing among all stakeholders, including indigenous peoples and local communities, non-governmental organisations, intergovernmental organisations, and industry representatives.

The WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge marks a pivotal moment in global IP governance. It emphasises collaboration, transparency, and respect for traditional knowledge, exemplifying science diplomacy by promoting international cooperation, aligning policies, establishing ethical frameworks, engaging in diplomatic negotiations, and contributing to global governance in the realms of IP and biodiversity conservation.

We do hope readers find this special issue informative & insightful.

Monika Jaggi

Formal Recognition to “Information Systems” and Prevention of Misappropriation

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The World Intellectual Property Organization (WIPO), through the ‘Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC)’ has been working for over two decades to achieve a global consensus on the protection of genetic resources (GR) and traditional knowledge (TK) under the Patent Law Treaty. The efforts were mainly focused on safeguarding GR and TK from misappropriation and biopiracy through the extant formal Intellectual Property (IP) Systems. The first session of the IGC, held in May 2001, centred on the discussion on IP issues related to access to GR and associated benefit-sharing; protection of TK, innovations and creativity; and protection of traditional cultural expressions (TCEs). In the context of GR and TK, the differences in national legislations related to the enforcement of IP rights versus the rights of knowledge holders added complexity to the matter. That there is yet no consensus on the definition of TK is a further difficulty.¹ Thus, the WIPO Diplomatic Conference held in May 2024 to conclude an international legal instrument on IP, GR and TK was highly significant and attracted the attention of all stakeholders.

The Diplomatic Conference led to the much-awaited WIPO Treaty on IP, GR and associated TK, which member states hailed as a crucial step forward.² The key objectives of the Treaty, as defined in Article 1, are to enhance the efficacy, transparency and quality of the patent system and to prevent patent grants on non-patentable subject matter related to GR and associated TK. The Treaty also emphasises the importance of patent offices having access to appropriate information systems on GR and TK to prevent patents from being erroneously granted for inventions that fail to meet the core patentability criteria of novelty and inventive step.

Particularly for India, a land bestowed with rich GR and TK, the deliberations at the WIPO at the IGC and Diplomatic Conference are of immense significance. In the first session of the WIPO-IGC in 2001, India highlighted that *“the existing intellectual property systems were oriented around the concept of private ownership and individual innovations. These appeared to be at odds, but not irreconcilably so, with emerging concerns about utilisation of genetic resources, traditional knowledge and folklore.”*¹ In consideration of the complexity and prohibitively high litigation costs associated with post-grant oppositions of patents, India established the Traditional Knowledge Digital Library (TKDL) as well as amended its Patent Law to prohibit patents on subject matter that is in effect TK, and included provisions for mandatory disclosure of the source and geographical origin of GR and associated TK. It was done to prevent the wrongful grant of patents and provide for opposition and revocation of a granted patent in case of non-disclosure or wrongful disclosure of GR or associated TK in patent applications.

Recognising the significant complementary role of documenting TK in preventing the erroneous grant of patents, WIPO has emphasised documenting information about GRs and TK for both defensive and positive protection of GRs and TK and herein “considered the potential roles and uses of databases, registers and other collections of GRs and/or TK as positive and/or defensive protection tools, whether as stand-alone mechanisms and/or as part of and related to the implementation of *sui generis* systems of TK protection”.³ In the context of the source of TK information, the TKDL holds an exemplary global position. With about 0.5 million entries from the Indian systems of medicine and over 350 outcomes of preventing TK misappropriation, the TKDL serves as an effective prior-art TK database. In the first session of the WIPO-IGC in 2001, India suggested “that other countries rich in traditional knowledge systems should consider establishing such a searchable database and WIPO should assist them in their efforts.”⁴



Source: WIPO

Article 1 on Objectives and Article 6 on Information Systems of the WIPO Treaty on IP, GR and associated TK assume greater significance for India. Under Article 6, the Treaty recommends establishing information systems such as databases of GR and TK associated with GR, in consultation with the knowledge holders, namely the indigenous people, local communities and other stakeholders, as relevant nationally. Further, these systems may be made available to patent offices for purposes of search and examination of patent applications to prevent the wrongful grant of patents on GR and TK associated with GR. Article 6 also emphasises the need for “appropriate safeguards” for such information systems. The TKDL, already meeting these criteria, is now poised to bring more focused attention of WIPO and its member states on the importance of including TK databases as part of the PCT Minimum Documentation. India’s commitment to this is stated in its National IPR Policy 2016. In the first session of the WIPO-IGC in 2001, India said that “*the TKDL should be prescribed as part of non-patent literature and minimum PCT documentation in order to ensure that patent examiners are duty bound to search the database for any prior art.*”⁴ The WIPO Treaty thus offers confidence to India and other similar nations for such an inclusive approach so that their TK and GR remain safe from vested interests and wrongful appropriation through IP systems.

Specifically, on Information Systems, the WIPO Treaty on IP, GR and associated TK aligns with India’s commitment and continued efforts to safeguard its heritage and serves as a success of its initiative on the TKDL and Patent Law, particularly Section 3(p), which prohibits patenting of inventions on TK.

Articles 3 and 5 of the WIPO Treaty focus on mandatory disclosures related to GR and associated TK, which is otherwise provided for only in a few national legislations. In this context, it is stated that India already has strong provisions on disclosure, which shall be further clarified in the Patents Act. The Trade-Related

Aspects of Intellectual Property Rights (TRIPS) Agreement under the World Trade Organization (WTO) provides for nations to “implement in their law more extensive protection than is required by this Agreement”. India has been a front-runner in matters related to TK and GR through several other *sui generis* legal systems and frameworks, holding a formidable position to safeguard the interests of the nation and its people on these matters. These frameworks include, but are not limited to, the Convention on Biological Diversity (CBD) and the national Biological Diversity Act (BDA), 2002, as amended in 2023, the International Union for the Protection of New Varieties of Plants (UPOV) and Protection of Plant Varieties and Farmers’ Rights (PPV&FR) Act, 2001, and the Geographical Indications of Goods (Registration & Protection) Act, 1999. The criteria for patentability, terms for disclosures, access and benefit sharing, sanctions and remedies under the relatable provisions indirectly focus on moral rights and an inclusive approach for safeguarding the livelihoods of farmers, forest dwellers and knowledge holders, among others.

From a global perspective, the WIPO Treaty signifies the growing recognition of TK, GR and related information systems by all countries, which was lacking two decades ago. Implementation will require Contracting Parties to bring legislative changes to enforce disclosure obligations on patent applicants. This would also facilitate appropriate recognition to the rights of knowledge holders. For India, the WIPO Treaty on IP, GR and associated TK, which primarily aims at improving the quality of the patent system and associated patent grants on the subject, is a recognition of its sustained efforts of over two decades in this direction. In the context of implementing this Treaty, India’s extant initiatives and provisions on GR and associated TK and IP systems, including the source of information and associated disclosures, sanctions, and remedies across diverse frameworks, should serve as a minimum standard towards its effective implementation. The conclusion of the WIPO Treaty marks the beginning of a new chapter with a renewed focus on protecting TK and TCEs, especially the yet-to-be-documented knowledge and practices of the indigenous and local communities. The learnings from these deliberations shall be pointers to future discussions towards better mechanisms to protect GR, TK and TCEs, keeping the interests of knowledge holders and global welfare as key goals.

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Feature Article

WIPO Treaty on Intellectual Property,
Genetic Resources and Associated
Traditional Knowledge

Balancing Competing Interests to a Landmark Achievement*

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The journey to the WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge¹ has spanned nearly a quarter of a century.² After years of negotiations in the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC), the Treaty's final text was agreed upon on 24 May 2024, marking a historic achievement. The Treaty represents a small step, although an important one, towards defensive protection of traditional knowledge (TK) from Indigenous Peoples and Local Communities (IPLCs) and the sovereignty of WIPO's Parties over their genetic resources (GR). It addresses the need for greater transparency in the use of GR and TK, especially in light of the rapid advancement of biotechnology and the ready availability of genetic information in databanks, such as gene banks, as well as the increased development of new technologies that still rely heavily on the "shortcuts" provided by TK.



* The views expressed are those of the authors and may not represent the position of the Ministry of Environment and Climate Change, Brazil.

The Treaty was born within the political context of Access and Benefit Sharing (ABS), shaped by competing and divergent interests: the Global North, predominantly biodiversity-poor and technology-rich, supports the free exchange of resources and information to fuel innovation and technological advancement. In contrast, the Global South, which is mainly biodiversity-rich and technology-poor, advocates for compliance with their sovereign rights by ensuring abidance to ABS regulations and by guaranteeing fair and equitable sharing of benefits arising from the use of GR and associated TK.³

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (CBD) provides the framework for ABS.⁴ It mandates that countries ensure compliance with ABS regulations, requiring transparency for its implementation.

The recently adopted WIPO Treaty introduces a critical provision: the requirement for the disclosure of origin in patent applications. Ideally, to maximise the effectiveness of this provision, the trigger for disclosure should align with the trigger for ABS requirements, which is the defined and agreed-upon concept of “utilization.” “Utilization of genetic resources”⁴ means to conduct research and development on the genetic and/or biochemical composition of GR, including through the application of biotechnology as defined in Article 2 of the CBD.⁵ A consistent trigger for both ABS and IP disclosure would ensure coherence in legal frameworks, enhanced transparency, juridical certainty for users of GR and TK as well as the possibility of streamlined administrative processes for patent offices and ABS authorities.

However, the Parties’ decision to use the expression “based on” as the trigger for the disclosure presents significant challenges. “Based on” means *“that the genetic resources and/or traditional knowledge associated with genetic resources must have been necessary for the claimed invention, and that the claimed invention must depend on the specific properties of the genetic resources and/or on the traditional knowledge associated with genetic resources”*.¹ This phrasing introduces ambiguity and limitations compared to the more comprehensive “utilization” trigger, as it provides a more restrict scope and does not provide clarity as “specific properties” has no definition within the text. How efficiently this scope will function to prevent misappropriation is still to be proved.

The National Institute of Industrial Property (INPI), which functions as the Brazilian patent office, already has mechanisms in place for the disclosure of compliance with Law 13,123, of 2015, regulating access and benefit sharing regarding genetic heritage. Presently, this requirement only applies to genetic information from organisms found *in situ* or that have acquired distinctive properties within Brazil. However, with the adoption of the new Treaty, INPI will need to expand this disclosure requirement to include the origin or source for all genetic resources on which a patent may have been “based on”, including those exotic to Brazil.

Digital sequence information (DSI) refers to genetic information stored and shared in digital formats. It includes nucleotide sequences, amino acid sequences, and related information used in genomics, biotechnology, and other fields.⁶ Decision 15/9⁷, adopted at the 15th meeting of the Conference of the Parties (COP 15) to the CBD, addressed the issue of DSI on GR within that Convention and its Protocols. It outlined several provisions regarding the use and governance of DSI, but mainly, the decision reaffirmed the commitment to the benefit-sharing principle when DSI is used. This decision adds complexity and urgency to the need for clear and enforceable requirements for the disclosure of the origin of GR and TK in patents and other forms of IP since DSI can be easily copied, shared, and transmitted across borders, making it challenging to track the origin of the genetic information and ensure compliance with ABS. Without such requirements, ensuring that the benefits derived from using DSI are shared with the rightful owners becomes arduous.

Several stakeholders, especially from provider countries and IPLCs, have criticised the exclusion of DSI within the trigger for disclosure in Article 3 of the new Treaty.⁸ However, DSI is not excluded from the scope of the WIPO Treaty, as evidenced by the inclusion of gene banks as a source of GR within the Treaty’s list of terms. Gene banks increasingly utilise DSI to catalogue and share genetic information and by explicitly referencing them as a potential source for the obtention of GRs, the Treaty has acknowledged the contemporary practices of using genetic data from *in silico* sources.

Moreover, Article 8 allows the review of the scope and the trigger, leaving room for future decisions on DSI by the CBD to shape a proper approach for dealing with DSI within WIPO. Once the CBD determines how to address the use and benefit sharing of DSI, these guidelines should be integrated into the WIPO Treaty through the review article for consistency, legal certainty and predictability.

Another concern for provider countries and IPLCs is that the phrasing of Article 5 might incentivise misappropriation, as it limits the possibility of revoking a conferred patent for failing to provide disclosure of origin. Suppose sanctions for non-disclosure are not stringent enough compared to the potential benefits to be gained from patenting inventions derived from GR and TK. In that case, entities might calculate that the cost of any imposed sanctions for non-compliance is much lower than the financial and competitive advantages secured through the patent. It may create a scenario where the risk of non-disclosure and misappropriation becomes an economically viable strategy, effectively encouraging entities to bypass benefit-sharing obligations to the detriment of the rights of IPLCs and hindering efforts to reverse biodiversity loss.

Additionally, requiring Parties to prove fraudulent conduct in cases of non-disclosure places an onerous burden on providing Parties and TK holders, especially when TK has been widely disseminated or diffused over time. Proving fraudulent intent demands concrete evidence that the patent applicant intentionally misrepresented or omitted the origin information, a task complicated by TK's informal and communal nature, often published without consent.⁹ The difficulty in proving fraudulent conduct may weaken the enforcement of disclosure requirements, potentially allowing misappropriation to go unpunished and undermining the overall efficacy of the Treaty in safeguarding TK.

INPI, as established by Law 13,123, of 2015, may not grant a patent if it fails to comply with ABS requirements in Brazil. As this checking step is adopted prior to a patent being conferred, Law 13,123, of 2015 still provides an effective mechanism for the protection of associated TK from misappropriation, despite any fragility that might exist considering Article 5 of WIPO's new Treaty. In fact, the introduction of the word "conferred" was an effort by Global South parties to maintain the ability of Parties not to grant a patent if it fails to disclose the origin or source of GR or TK.

One major contention within IGC negotiations has been the call for an international Treaty to provide *sui generis* protection for GR and TK. Such a *sui generis* framework would recognise the intrinsic value and distinct nature of TK and traditional cultural expressions (TCEs), offering a solution that proactively recognised and preserved this knowledge, guaranteeing rights to its holders.¹⁰ Despite longstanding calls for a *sui generis* system, the adopted WIPO Treaty falls significantly short of this objective: it primarily offers defensive protection through its disclosure requirement. Addressing unresolved and cross-cutting issues, as well as considering options for a draft legal instrument for TK and TCEs, remains on IGC's mandate for 2024-2025.¹¹

Notwithstanding the many shortcomings, the outcome of the WIPO Treaty should still be considered a success since it represents a step forward by incorporating TK directly into the WIPO framework and, by extension, the global intellectual property system. Prior to this Treaty, TK protection was indirectly addressed through environmental agreements such as the CBD and the Nagoya Protocol. These agreements, while important, could not integrate TK into the global IP regime, leaving it on the periphery of international intellectual property law. In conclusion, the WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge lays a foundation for the efficient protection of GR and TK, fostering a more inclusive and biodiversity-friendly global IP system. Continued collaboration and refinement of the Treaty's provisions will be essential to fully realise its potential and achieve a fair balance between the interests of biodiversity-rich and technology-rich nations, as well as TK holders.

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Feature Article //

WIPO Treaty on Intellectual Property,
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A Balanced Outcome*

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Just after it signed the WIPO Treaty on Intellectual Property (IP), Genetic Resources (GR) and Associated Traditional Knowledge (ATK)¹, the Brazilian delegation was effusively greeted by the representatives of Brazilian indigenous peoples present at the Diplomatic Conference (DipCon). Their emotions conveyed the tremendous effort put into a decades-long struggle of megadiverse countries, Indigenous Peoples and local communities (IPLCs) to have their contribution to the advancement of human knowledge and technological progress recognised by and inscribed in the international system of intellectual property.

The Treaty's adoption by consensus demonstrated that multilateralism "is alive and well at WIPO"², as highlighted by Director General Daren Tang. It represented a victory for both developed and developing countries in using multilateralism to address global issues.



* The views expressed are those of the author and may not represent the position of the Brazilian Government.

Notwithstanding the successful result, the history of negotiations did not anticipate a positive outcome. Over the past decades, an insurmountable gap existed between developed and developing countries. The latter demanded an international mandatory disclosure requirement for GR and ATK, while the former resisted.

That gap was bridged thanks to the support of WIPO, the diplomatic engagement of all delegations and the adept leadership of the President of the Conference, Brazilian Ambassador Guilherme Patriota, along with the two main committees chairs, Australia's Jodie McAlister and Namibia's Vivienne Katjuongua. Ambassador Patriota described the DipCon's outcome as a "technically sound and balanced outcome"², celebrated by delegations and intergovernmental organisations³⁻⁵.

Delegates and observers witnessed that the converging voice from the Global South was fundamental to the positive result. Countries from Latin America and the Caribbean, the African Group, the Asia-Pacific Group and the Like-minded Megadiverse Countries engaged in extensive and exhausting negotiations to defend their long-held positions on the key issues of the text, such as the "trigger" for the disclosure requirement, sanctions, and the review and revision processes.

What is the Treaty about?

The Treaty's main achievement is creating an international mandatory disclosure requirement concerning the origin of GR and ATK in patents. It harmonises rules for over 30 countries that already provide such disclosure requirements and sets a minimum standard for other countries willing to introduce it in their laws.⁶

This requirement enhances patent transparency and quality by ensuring that patent applications disclose if they are "based on" GR and ATK (Article 3). The term "based on" is known as the trigger of disclosure and applies to GR and ATK "necessary for the claimed invention" that "depend on the specific properties". The text does not detail what necessary or specific properties mean.

It took a lot of work to arrive at this solution for the trigger. Some delegations defended a more restrictive trigger such as "materially and directly based on"; many countries from the Global South defended the term "utilisation", as mentioned in the Nagoya Protocol and the BBNJ Treaty.⁷ They all found common ground by agreeing to just "based on".

Most delegations understood that the disclosure requirement should not overburden patent offices (especially small ones) and agreed that contracting parties do not make offices verify the authenticity of the disclosure (Article 3.5). The provision, however, does not forbid offices that are willing to verify the authenticity of the disclosure.

As with most legal rules, the Treaty provides for sanctions for non-compliance with its obligations (Article 5). Before imposing sanctions, parties are required to offer an "opportunity to rectify failure to disclose," except in cases of "fraudulent conduct or intent". Each party will interpret fraudulent intent "according to national law," facilitating the application of different legal regimes.

Readers familiar with the history of the negotiations already expected that Articles 3 and 5 would be the most contentious during the DipCon, but negotiations on other provisions were also challenging, such as those concerning the evolution of the Treaty. The main difference was which countries could vote during revision: only Treaty members or all WIPO members.

The possibility of modifying the Treaty will be part of the review process (Article 8) to be conducted by the assembly of the contracting parties (Article 10), empowered to address "issues arising from new and emergent technologies." Following the review, a diplomatic conference might amend the Treaty "in accordance with the Vienna Convention⁸ on the Law of Treaties" (Article 14). Article 39 of this Convention states that a "Treaty may be amended by agreement between the parties."

Given the new technologies may be addressed in the future, some delegates lamented that the Treaty does not expressly mention current technologies like digital sequence information (DSI). Other delegates, on the contrary, were pleased that it did not.

The Treaty would not have innovated if it mentioned DSI. The BBNJ Treaty⁷ mentions it, and a decision under the CDB⁹ addresses it. It would also be compatible with practices of the International Nucleotide Sequence Database Collaboration (INSDC), which includes data on the country of origin and date of collection of the nucleotide sequences (a synonym for DSI).¹⁰ It is a good thing that decisions in other forums might complement the implementation of the Treaty.

A Win-Win Game

Some people might think that developing countries, like Brazil, do not have much to gain from the Treaty because their IP legislation already cater for stronger protection to GR and ATK. This view, however, fails because it overlooks spillover effects. The GR and ATK mandatory disclosure requirement introduces in the international IP system the recognition of the contribution of IPLCs to scientific and technological development. It creates an obligation that will contribute to innovation in developing countries. It will also strengthen megadiverse countries' positions in other fora, providing, for instance, with stronger arguments to demand more benefit sharing initiatives.

Additionally, the Treaty is flexible enough to be attractive to some developed countries that are really committed to the conservation of biodiversity and to the respect of human rights of IPLCs. Even those that only pay lip service to those two objectives might find reason in the future to join the system.

There actually are reasons to believe the Treaty benefits all countries. If the decades-long resistance to adopting the disclosure requirement on GR and ATK was based on protecting innovation, the Treaty might also deliver to those interests. Evidence from Brazil suggests that the transparency and legal certainty provided by the disclosure requirement encourage innovation: Figure 1 shows an increase in patent applications after Brazil adopted its current regulation on access to GR and ATK, the Biodiversity Law, in 2015.¹¹

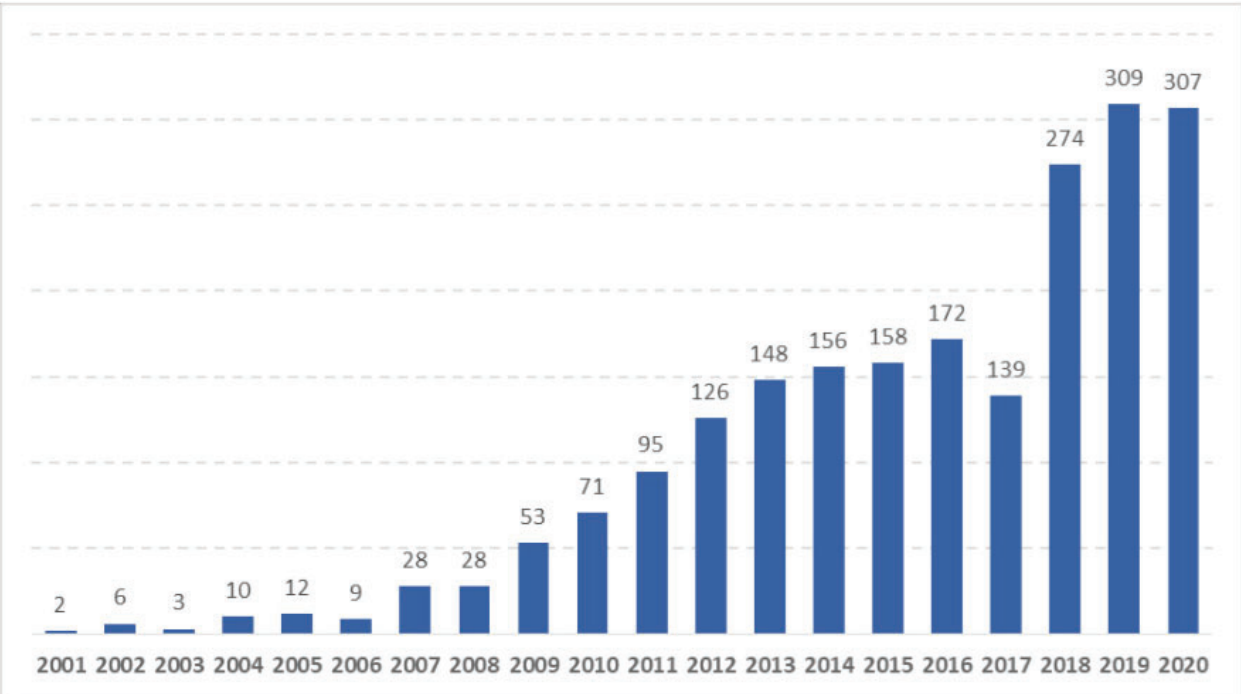


Figure 1. Patent Applications with Access to GRATK (Source: Instituto Nacional da Propriedade Industrial (Data as of February 2020))

While there is no in-depth explanation for that correlation, one can assume that the disclosure requirement incentivises IPLCs to collaborate with industry stakeholders in a positive sum interaction.

The disclosure requirement also results in more widespread gains. IPLCs “often manage their lands in ways that are compatible with, and often actively support biodiversity conservation.”¹² A World Bank study stated that 80% of Earth’s biodiversity is located in traditional indigenous territories.¹³ It is in everyone’s interest to incentivise Indigenous communities to maintain their role as guardians of biodiversity, especially in times of global warming. These incentives might come from benefit-sharing mechanisms, which the Treaty might facilitate.

However, the Treaty may present challenges for some developing countries that do not currently have a disclosure requirement and might find difficulties in processing foreign applications. It should be a temporary challenge limited to a transitional implementation period, during which WIPO may provide technical assistance and capacity building for them (Article 10.2, g). Countries that already have a mandatory disclosure requirement should not face significant problems, as Article 9.2 clarifies that the Treaty should be implemented “within their own legal systems and practices.” The biggest challenge is getting as many countries to join as quickly as possible so that the Treaty can enter into force.

Conclusion

As happens in any meaningful negotiation, no party left the DipCon completely satisfied, but the Treaty struck a fine balance between the interests of developed and developing countries. It is flexible enough to allow countries to maintain higher levels of protection for GR and ATK (Article 9.2), and it is also an attractive invitation for new parties to join. Although futurology is not the craft of diplomats, it might be safe to bet that if the Treaty delivers results, currently hesitant countries will understand the advantages of acceding to it.

Regardless of the future, the existence of the Treaty already sends an important message. It welcomes contributions to the international system of intellectual property from those far from positions of power, like the IPLCs. It places the intellectual property system as a contributor to addressing global challenges, such as biodiversity conservation, shaped by multilateral norms and institutions.

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A Milestone for Respecting Genetic Heritage and Associated Traditional Knowledge

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The recent agreement within the World Intellectual Property Organization (WIPO) framework ignites a flame of hope about the international community's ability and goodwill to find consensus on global problems. Though crises are not rare in international relations, the devastating shared experience of the COVID-19 pandemic was expected to intensify the cooperation efforts. However, the reality reveals growing tensions marked by military wars and deadlocks in climate and trade negotiations.

According to Keohane (2006), multilateralism can be defined as the institutionalised collective action undertaken by a set of independent states and established in an inclusive manner.¹ Established in 1967, WIPO aims to cooperate globally in promoting intellectual property protection. As defined by the convention that created WIPO in 1967, these IP rights include "literary, artistic, and scientific works", "inventions in all fields of human endeavour", and "scientific discoveries", among others.

Over the past 20 years, there has been an exponential increase in research and innovation based on genetic resources and associated traditional knowledge, with a tripling in the number of patents granted globally related to biotechnology.² Nevertheless, this rapid evolution has not been accompanied by adequate national legislative and administrative structures, especially in developing countries, to ensure the balanced protection of these resources and knowledge, prevent their misappropriation and promote the fair and equitable sharing of the benefits arising from their utilisation.

In this context, the 26th WIPO General Assembly in 2000 approved the creation of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). Despite efforts to facilitate understanding among members, the IGC could not reconcile the interests of providers and users of these resources and knowledge holders. At the 18th Session of the Committee, held in 2011, the documents relating to genetic resources and traditional knowledge totalled almost 300 pages.³

In 2022, the former IGC Chair introduced a draft international legal instrument⁴ to advance the negotiations being conducted by the Committee without prejudice to any Member States' positions. When the 55th WIPO General Assembly decided to convene a Diplomatic Conference (DipCon) to conclude the negotiations, this preliminary version was adopted as the basic proposal to be discussed by the countries. In addition, to pave the road to the conference, the General Assembly agreed on a Special Session of the IGC to further close existing gaps and set up a Preparatory Committee to provide for the required administrative procedures.

The DipCon was held in May 2024 at WIPO's Headquarters in Geneva, Switzerland. Approximately 1,200



delegates and observers worldwide, including representatives of Indigenous Peoples and Local Communities, attended this historic event.

Led by Brazil's Ambassador Guilherme Patriota, the DipCon navigated deep divides between the demander developing countries and the so-called Group B, composed of developed nations. The work was divided between Main Committee I, coordinated by the representative of Australia and in charge of the Preamble and Articles 1 to 10, and Main Committee II, led by the representative of Namibia and responsible for the remaining Articles 11 to 23.

Ultimately, the conference achieved a substantive agreement emphasising transparency. The key point of the new Treaty is undoubtedly the obligation to disclose the origin of genetic resources and associated traditional knowledge that often serves as a basis for innovation and technological development focused on their potential economic value. It also allows for imposing sanctions for non-compliance with the disclosure requirement in the event of fraudulent conduct or intent.

The incorporation of this transparency requisite into the intellectual property system at the time of the patent application will favour the claim of benefit-sharing by countries of origin of the genetic heritage and holders of traditional knowledge, providing incentives for the maintenance and strengthening of a way of life that generates environmental services on a global scale. It will also enable timely opposition in case of misappropriation, protecting these resources and knowledge and preventing the granting of unfair patents.

It is essential to highlight that country of origin means only where resources are found in "*in situ*" conditions, within their ecosystems and natural habitats, or where domesticated or cultivated species have developed their distinctive properties. The notion of source, on the other hand, includes research centres, gene banks, other *ex situ* collections or repositories, as well as Indigenous Peoples and Local Communities.

However, the absence of an explicit reference to digital sequence information (DSI) is a matter of concern. It is a crucial issue due to the rapid biotechnological development, which makes direct access to the biological component of interest for obtaining the associated genetic information increasingly dispensable. As gene banks worldwide have already seized (often improperly) and sequenced a large part of the resources, synthetic biology research and commercial applications derived from this information are expanding without the need to obtain regular access respecting the dictates of the national legislation of the country of origin.

The topic has achieved significant prominence in different international forums (CBD, FAO, WHO, WTO, etc.), mainly due to the divergence in the sharing of benefits arising from DSI. Even for this reason, it may be more appropriate to leave its discussion for the future, along with derivatives and new and emerging technologies,

in the context of the review already provided by the Treaty after four years of its entry into force. In addition, the instrument establishes that it shall be implemented harmoniously and in a mutually supportive manner with other relevant multilateral agreements.

The document also expresses the need for the inclusion and participation of Indigenous Peoples and local communities in discussions on its implementation. It is done without presenting a definition for these human collectivities or their traditional knowledge, recognising their right to self-determination based on their habits and traditions. In this regard, it offers an apparatus for the respect and appreciation of ancestral legacies, as well as for the generation of employment and income for those who live in the forest and act as drivers for biodiversity conservation and sustainable use.

Notably, some countries have been making significant internal progress in monitoring access to genetic heritage and the consequent process of technological development. The Brazilian system is among the most advanced and mature ones, and it is based on open dialogue between industry, researchers and the Ministry of Environment and Climate Change, which is responsible for regulating the issue.

The legislation enacted in 2015⁵ includes the expression “information of genetic origin” in the concept of genetic heritage and requires the indication of the origin of traditional knowledge to safeguard the rights of Indigenous Peoples and local communities. This Brazilian law has brought greater efficiency by reducing bureaucratic access requirements, thereby stimulating research and innovation based on the sustainable use of biodiversity while still prioritising its conservation. Clearer criteria for sharing benefits arising from the economic exploitation of products and materials derived from genetic resources and associated traditional knowledge have also enhanced legal certainty for companies’ investment and facilitated inspection procedures. Since its implementation, more than 76,000 regular accesses have been registered and more than 17,000 products have been notified.⁶

At the Conference’s closing ceremony, 30 countries* signed the Treaty, and the Gambia also did it the following week, so the instrument has 31 signatories⁷ to date. However, it will only come into force after depositing the 15th instrument of ratification or accession with the WIPO Director General as depositary of the Treaty.

In conclusion, it is undeniable that the new Treaty enriches the intellectual property system by incorporating the environmental, social and human rights dimensions. Its multiple approaches can contribute not only to the sustainable development and economic stability agendas but also to the revitalisation of multilateralism and the strengthened recognition of its role as a means of mediating conflicts and facilitating consensual global solutions.

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German Center for Research and Innovation New Delhi - An Instrument of German Science Diplomacy in India

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This article provides an overview of the Indo-German Center for Research and Innovation (DWIH) New Delhi, an instrument outlined in Germany’s 2020 Science Diplomacy Strategy. It delves into the institutional structure and activities of the DWIH, highlighting its unique position as a research-led branch of Germany’s science diplomacy efforts. Additionally, it situates the DWIH within the broader context of Germany’s science diplomacy and internationalisation policy frameworks, as well as in the German stakeholder network of Indo-German research and innovation cooperation.

Policy Framework

Although international research cooperation and mobility have been practised for decades, the concept of science diplomacy has gained significant attention over the past fifteen years, both on a theoretical and practitioner level and has become prominent in public policy.¹ Science diplomacy² posits that science can and should systematically contribute to diplomatic efforts and foreign policy. In 2020, Germany adopted its Science Diplomacy Strategy, based on the Research and Academic Relations Policy (Initiative Außenwissenschaftspolitik)³, aiming to establish Germany as a world-leading hub for research and to develop international networks for academics and researchers since 2009. The science diplomacy policy has a broader scope, recognising the role of science in fostering international relations and addressing global challenges.⁴ The strategy emphasises cooperation between foreign policy, science, citizen science, and science communication. Expanding and defending academic freedom, enhancing Germany’s profile as a leading country for science and innovation globally, strengthening and expanding institutional networks as well as academic exchange, and contributing to meeting the SDGs are core principles of this strategy.

The Federal Foreign Office oversees the Science Diplomacy Strategy, while the Ministry of Education and Research (BMBF) leads the strategy for “Internationalisation of Education, Science and Research.” The internationalisation strategy addresses the necessity for joint research and academic relations policy, location marketing and joint presence structures abroad, among other instruments.⁵ Currently, the BMBF’s science diplomacy efforts are centred on building trustful partnerships (Connect), providing evidence-based advice to policymakers (Inform), and creating conditions for independent science, research and teaching (Enable) through research cooperation and academic mobility.⁶ Various German funding and research institutions have also embraced science diplomacy, reflecting on their roles in position papers.⁷

Indo-German Cooperation - German Stakeholder Network

Indo-German academic and research cooperation has a long history, predating the formal establishment of internationalisation and science diplomacy concepts. Milestones include supporting the establishment of the Indian Institute of Technology (IIT) Madras in 1959, opening the German Academic Exchange Service (DAAD) office in 1960, the Inter-Governmental Agreement on Cooperation in Scientific Research and Technological Development in 1974⁸, establishing the Indo-German Center for Science and Technology in 2010 and opening the Max Weber Forum for South Asian Studies in 2021.

The activities of the German stakeholder network centre around individual mobility schemes through scholarships and fellowships, joint higher education, and research cooperation projects, along with establishing an institutional presence in India. Over the last 20 years, numerous German universities and research organisations have opened liaison offices in India, providing a solid foundation that supports the development, coordination, and execution of academic mobility and research initiatives. They also serve as advisories to the policymakers in their institutions. The German stakeholder network in India comprises multiple players on different levels.

- Government presence and initiatives: Besides science counsellors in the German embassy and consulates, the federal government supports the Indo-German Center for Science and Technology (IGSTC), a joint initiative focusing on facilitating Indo-German R&D networking through substantive interactions among government, academia, and industry. Multiple states maintain liaison offices with a broad scope and a strong focus on economic relations and occasionally university and research cooperation.
- Intermediary organisations/funding organisations: Currently, two intermediary institutions have offices in India. The German Research Foundation (DFG) promotes and funds cooperation research projects in fundamental research, whereas the focus of the German Academic Exchange Service (DAAD) is on academic mobility and cooperation between universities. Its portfolio includes scholarships for individual mobility, funding for higher education cooperation projects, supporting German studies and the alumni network. Furthermore, the DAAD is responsible for promoting Germany as a destination for study and research and provides expertise on academic cooperation. The Alexander von Humboldt Foundation offers individual mobility schemes for senior researchers but has no office in India.
- Non-university research institutions: The Fraunhofer Gesellschaft and the Max Planck Society have liaison offices in India to facilitate programmes for their institutional network in Germany. The recently established Max Weber Forum for South Asian Studies conducts research in humanities and social sciences in India. It promotes cooperation through publications and academic events.
- Universities: Seven universities, including the Technical University of Munich, the University of Heidelberg, the Technical University of Dresden, and the Freie Universität Berlin, have liaison offices in India to support exchange and cooperation programmes and oversee the promotion of their home institutions.
- Industrial research: Over the last decade, German companies like Siemens and BASF have founded R&D research units in India, conducting applied research in dedicated centres.

While the government and intermediary/funding organisations follow a broader, cross-institutional scope, research institutions (universities, non-university institutions, and industrial units) adopt a narrower approach, focusing on the aims of their respective institutions. Compared to the government's top-down approach, intermediary institutions like the DAAD and DFG are academic-led and operate more bottom-up, as they are independent organisations with German higher education institutions as their members.

The Indo-German Center for Science and Technology (IGSTC) and the Merian Center for Advanced Studies play special roles as joint initiatives of the Indian and German governments. The IGSTC is policy-driven, with a strong representation of policy stakeholders on its board, while the Merian Center follows a bottom-up approach, being led by a university consortium and hosted by an Indian institution.

Besides the institutions with an organisational presence, the cooperation network on the German side

is comprised of a more extensive set of institutions involved in cooperation projects and the exchange of scholars. The network of German institutions involved in Indo-German cooperation is vast and segregated, with different institutions having distinct roles and purposes.

DWIH New Delhi – Mission, Structure and Core Activities

The German Centre for Research and Innovation (Deutsche Wissenschafts- und Innovationshaus, DWIH) New Delhi plays a distinguished role within the German stakeholder network¹⁰. As a science and innovation centre, it represents a new policy instrument that Germany, along with other innovative countries like Switzerland, Denmark and the UK, has established over the last fifteen years.¹⁰ The DWIH New Delhi, part of a network of six centres worldwide, is strategically located in hubs with high relevance for research and science cooperation. Founded between 2010 and 2023, the DWIHs serve as distinct instruments of the Research and Academic Relations Policy (2009) and the Science Diplomacy Strategy (2020). They are also mentioned in the Internationalisation Strategy of the German government. The DWIH network is funded by the Federal Foreign Office and managed by the DAAD.

The strategic framework of the DWIHs¹¹ is set by a board of trustees and a program committee in Germany, which includes representatives of three ministries, industry associations, intermediary organisations (DFG, DAAD, AvH), non-university research institutions, and the association of German universities (HRK). On the local level, an advisory board supports the DWIH in designing its activities. This local advisory board can join German research and innovation institutions, such as universities, research institutions, intermediary organisations or companies. These institutions must be present with an office (main supporters) or be highly interested in cooperation with the host country (associated supporters).

This participative structure on central level in Germany and on local levels is unique and enables continuous dialogue and exchange between science and policy. Given the high representation of research and academic institutions, DWIHs are research-led while systematically integrating the policy perspective. The core mission of the DWIH is to represent German science, research, and innovation across the board and promote cooperation with Germany at its respective locations.

The DWIH New Delhi, established in 2012, comprises a large part of the German stakeholder network in India. The DWIH New Delhi currently has 23 supporters¹², of which 17 have offices in India. Firstly, it enables continuous dialogue and knowledge exchange among different actors in the German stakeholder network. Secondly, it serves as a gateway to Germany and India, offering guidance and access to both countries' innovation and research landscapes. Thirdly, it provides a platform for dialogue and exchange on selected topics between multiple actors in India and Germany, moving beyond bilateral institutional approaches.

Key activities of the DWIH New Delhi are:

- **Knowledge and Advice:** The DWIH provides information and advice on the R&D systems of India and Germany through its website, social media, and events such as the biannual Indo-German Research Day. This event facilitates discussions on science policy and management and offers participants access to information on funding and institutional cooperation possibilities.
- **Dialogue:** The DWIH creates thematic dialogues between international stakeholders in research, politics, and industry. For example, the “Indo-German Forum: Sustainable Urban Mobility” 2023 brought together researchers, decision-makers, and professionals from both countries to present research projects and discuss solutions for sustainable urban mobility covering topics such as governance, integrated mobility and energy systems, but also technology diffusion and adaptation.
- **Connect:** The DWIH strategically connects innovators, researchers, and science managers from Germany and India to enhance cooperation. For instance, over the last three years, the “Incubators Connect” project has been bringing together managers of incubation and innovation centres from both countries to discuss cooperation models and pilot new formats in international technology transfer.

- **Expertise:** Leveraging its activities and networks, the DWIH New Delhi provides expertise in international cooperation for science administrators and policymakers. In 2023, the DWIH director, Dr Katja Lasch, co-chaired the Alliances group in the G20-Startup Engagement group, contributing inputs for the group's communiqué.

The DWIH New Delhi's activities focus on topics such as science diplomacy and policy, climate change and sustainability, technology transfer, and science-based entrepreneurship. In a 360-degree approach, the DWIH builds Indo-German networks around these topics based on its supporter structure, always addressing German interests and integrating Indian perspectives. Its activities target scientists, researchers, science managers, and policymakers in Indo-German research cooperation.

Conclusion

The DWIH New Delhi is a vital instrument of science diplomacy, enabling and enhancing international cooperation in research and innovation. It is a research-led initiative by the German government that integrates science and policy perspectives through its unique participative structure. One strength of the DWIH New Delhi is its multilateral and network approach, moving beyond singular institutional interests in bilateral research cooperation. It brings together the German academic and research stakeholders in India under one organisational umbrella and facilitates continuous exchange amongst its supporting institutions. By establishing and enlarging networks, it promotes Germany as a leading country for science and innovation in India, continuously fostering dialogue, facilitating knowledge exchange, and contributing to the broader realm of German science diplomacy.

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Africa sets up a training centre in science diplomacy

Africa now has a research and training center in science diplomacy called the "Science Diplomacy Center for Africa". It was inaugurated on 6 May 2024 in Kigali, the capital of Rwanda, the day after the fifth annual conference of the International Network in Governmental Scientific Advice (INGSA). This center is the result of a collaboration between SciTech DiploHub, the science and technology diplomacy hub based in Barcelona (Spain), the municipal governments of Barcelona and Kigali as well as universities and scientific academies from some fifty African countries. This project represents the largest-

ever investment in scientific cooperation with Africa made by a Europe-based organisation. The Science Diplomacy Center for Africa will coordinate initiatives among scientists, diplomats, policy-makers, tech entrepreneurs, and multinational companies, fostering collaborative research and technological development in Africa. In the first three years of activity, the Center is expected to train over 2,500 African professionals in science and technology diplomacy and support the development of new strategies in science policy for about twenty national and local governments in the region.

Australia launches first round of A\$40m science diplomacy fund

The Australian government has launched the first round of A\$40 million Global Science and Technology Diplomacy Fund to boost its influence in Asia-Pacific science and technology development. Starting on March 20, the Strategic Element funding round offers up to A\$6 million for collaborative projects between Australian and Asia-Pacific researchers. The initiative is seen as a move to enhance Australia’s stability, confidence, and global influence. The funding is available for projects with Indonesia, Malaysia,

Singapore, Thailand, Vietnam, New Zealand, Japan, South Korea, and Brazil, focusing on advanced manufacturing, quantum computing, artificial intelligence, hydrogen production, and RNA research. Jointly administered by the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering, the academies stated that the fund will be pivotal in advancing the region’s science and technology landscape.

Announcements //

Academia-Industry Training AIT India program 2024

Submission deadline: 5 August 2024

Further information at:

https://kfpe.scnat.ch/en/funding_possibilities/uuid/i/ad4e4838-7362-5a77-ac37-b9d51f2be5eb-Call_Academia-Industry_Training

SNSF SPIRIT Programme

Submission deadline: 5 November 2024

Further information at:

<https://www.snf.ch/en/nlghrhzybD90TM9D/funding/programmes/spirit>

MoUs Signed //

EU-India Join Forces to Promote Start-Up Collaboration on Recycling of E-Vehicles Batteries under Trade and Technology Council

The European Union (EU) and India launched an Expression of Interest (Eoi) on 09 April 2024 for startups working in battery recycling technologies for Electric Vehicles (EVs), aiming to enhance cooperation between European and Indian SMEs and startups in the clean and green technologies sector. The Eoi provides a platform for startups/SMEs from India and the EU to pitch innovative solutions and engage with venture capitalists and solution adopters. Twelve innovators—six from India and six from the EU—will be selected to pitch their ideas at a Matchmaking Event scheduled for June 2024. Following their

presentations, six finalists (three from each region) will be awarded the opportunity to visit the EU and India, respectively. Key highlights of the event include identifying, supporting, and promoting startups/SMEs dedicated to advancing battery recycling technologies, and facilitating cooperation, exploring trade opportunities, and deepening customer relations. This initiative offers Indian startups a chance to establish strategic alliances with EU counterparts, accelerating the development of advanced battery recycling techniques focused on waste minimisation and resource sustainability.

DAHD and UNDP signs MoU on Digitalisation of Vaccine Cold Chain Management, Capacity Building, and Communication Planning

The Department of Animal Husbandry & Dairying (DAHD), Ministry of Fisheries, Animal Husbandry & Dairying signed a MoU on 20 May 2024 with the United Nations Development Programme (UNDP) India to digitalise vaccine cold chain management, capacity building, and communication planning.

This collaboration marks a significant step towards enhancing animal health and husbandry practices in India, leveraging UNDP's global expertise and DAHD's mandate to create a robust and inclusive framework for managing animal health and welfare.

New Publications //

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