

POLICY BRIEF

June 2020

BENEFIT SHARING AND TRADITIONAL KNOWLEDGE: UNSOLVED DILEMMAS FOR IMPLEMENTATION

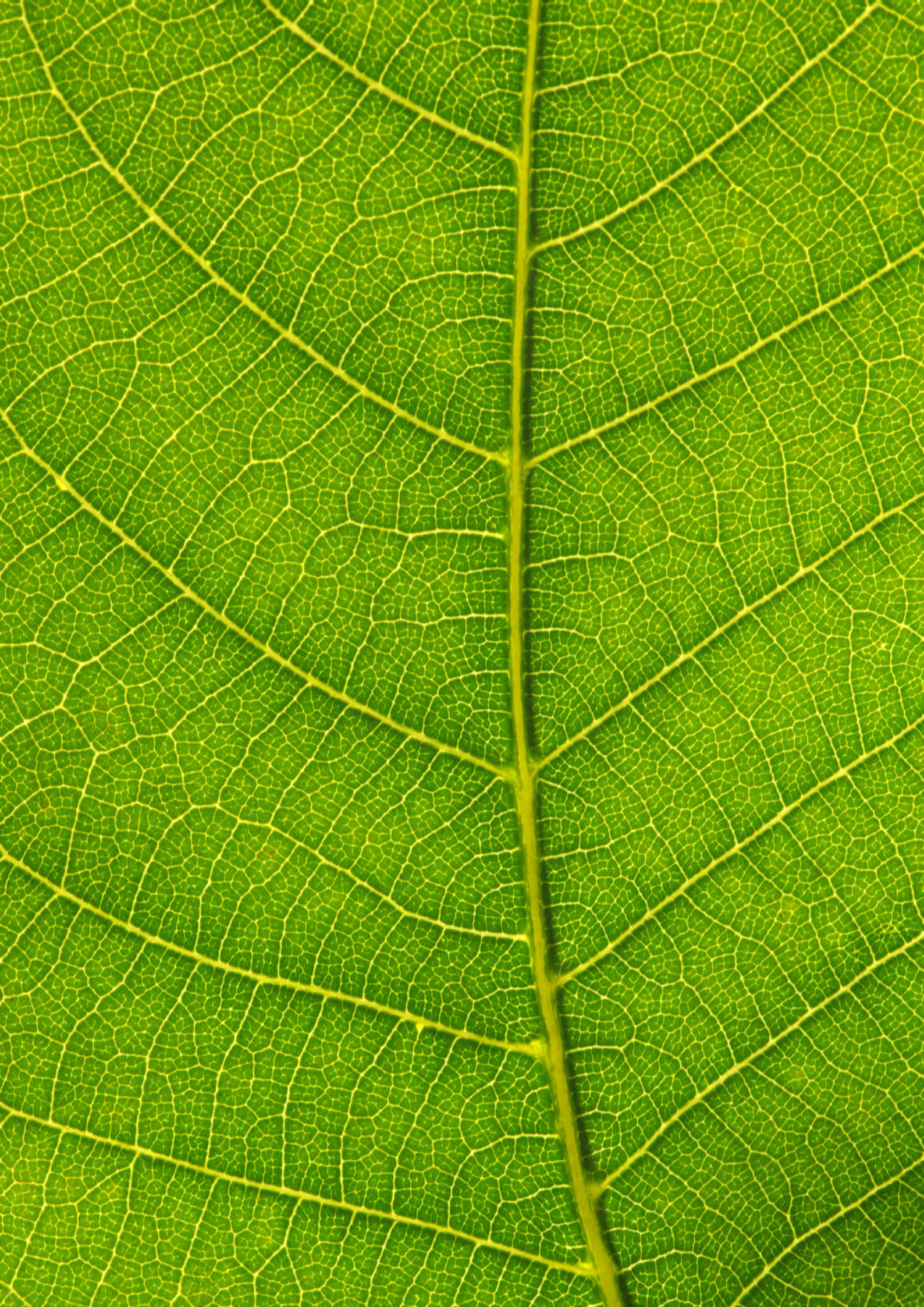
The Challenge of Attribution and Origin:
Traditional Knowledge and Access and Benefit Sharing

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Voices for BioJustice

Working towards the equitable and
sustainable use of biodiversity



KEY POINTS

- **Access and benefit sharing (ABS) regulations and agreements are intended to provide benefits from the use of genetic resources and traditional knowledge (TK). However, over the last 30 years, few holders of traditional knowledge associated with genetic resources (TKGR) have received benefits.**
- **The lack of beneficiaries is due in part to the limited use of TK in biotechnology and other high technology sectors, but another contributing factor is the underlying assumption behind the ABS model under the Convention on Biological Diversity (CBD) and Nagoya Protocol: that TKGR can be attributed exclusively to a people and a place.** This kind of pinpointing may be possible for Indigenous groups that have long histories in a particular location and possess unique knowledge about a species found only in this location. But these cases are the exception.
- In many cases – perhaps the vast majority – **it is conceptually and practically difficult to specifically identify people and places associated with the origins of TK**, and in some cases it is futile or impossible. It is *conceptually difficult* because knowledge evolves, hybridises, and adapts over time to events and circumstances, and the concept of “origin” is therefore often a social construct more than a factual reality. It is *practically difficult* either because we simply do not know the origin, a specific origin does not exist, or the origin happened so long ago that it is impossible to prove. Moreover, knowledge is often shared across groups and takes different forms.
- **Visible, well-organised and resourced, or politically connected TKGR-holding communities, groups, or representative organisations may be in a better position to “prove” origin – perhaps to the exclusion of others with equally legitimate claims who are less advantaged.** Experience shows that industry and governments often look for the easiest (rather than the most just) route to achieve ABS compliance, and thus well-organised groups are likely to hold sway.
- **Recognising TK and ensuring that TK holders receive equitable benefits for the use of their knowledge is critical, but what criteria should be used to determine whose knowledge counts?** The likelihood of evolution, hybridisation, adaptation, and geographical shift arguably reduces the idea of origin as the sole qualifier for benefit sharing, even where origin can reliably be identified. Subsequent but different populations might have played vital roles in maintaining, improving, and adapting TKGR, but may not be the “original” knowledge holders. Are these groups excluded from benefit sharing? By seeing TK as ever-changing, rather than static, we can better understand that different individuals and groups innovate, change, and add knowledge along the way. If a goal is to protect TK holders from dispossession or appropriation, new approaches might be required to share benefits more widely and accommodate contributions from diverse knowledge holders.
- **The connection between TKGR held by local people and the commercial product or technology incorporating this knowledge may vary widely.** In contrast, TKGR and a product or technology may be essentially the same – for example, a plant extract prepared by an Indigenous community or traditional healer to treat inflamed skin and subsequently sold by a company in standardised form to treat eczema.
- **TK from a range of groups might be used to develop products or technologies.** TK takes many forms – for example, knowledge of use, harvesting and cultivation techniques, or processing and storage. How is benefit sharing determined in such cases, and how is value assigned to each contribution and form of TKGR?
- **In the case of TK that is shared across large geographic distances and communities, it is worth exploring regional and multilateral approaches to benefit sharing, as envisaged under Article 10 of the Nagoya Protocol.** This might be a more appropriate approach than ABS bilateral agreements that select beneficiaries, often arbitrarily, creating inequity and conflict. However, the transaction costs of multilateral funds, and the difficulty of sharing benefits equitably with the full range of TKGR holders, should not be underestimated.
- Finally, **use of the word “traditional” itself raises concerns.** A number of Indigenous communities have spoken out against the term and describe the label “traditional” as a colonial construct that renders their cultures static, fixed in time, and unable to adapt.

THE GLOBAL FLOW OF GENETIC RESOURCES AND KNOWLEDGE, AND THE ATTRIBUTION AND ORIGIN PROBLEM

After almost 30 years of exploring benefit sharing from traditional knowledge associated with genetic resources (TKGR), few benefits as conceived under the CBD and Nagoya Protocol have accrued to Indigenous and local communities. ABS has done far less to encourage fair exchange – or any exchange for that matter – than we would have hoped or expected. While there are many contributing factors, in this policy brief we will focus on one: the question of “who was first” – that is to say, who has “priority” over others for any benefits that are shared.

While the CBD, ABS, and traditional or indigenous knowledge laws typically rely on the nation-state as a framework, the vast majority of the world’s species are not confined to single countries, and indeed many national borders are colonial constructs that cut across both genetic resource ranges and associated traditional knowledge.

Relatively isolated islands such as those of the Galapagos in Ecuador, and single-island or archipelago states such as Madagascar and Indonesia, have many endemic species found nowhere else, as do large, megadiverse countries such as Brazil and others with rainforests, extensive mountain ranges, and isolated regions. But most species are dispersed across political borders and have spread across the globe for thousands of years.

Moreover, the ranges of many species have increased in recent centuries through biological globalisation triggered by expanded international trading, colonialism, and large-scale population movements. Plants moved along with people, but also became rooted in different cultures through cultural and lifestyle appropriations. These appropriations included the adoption of new foods, crops, and plant-based medicines that were shared with, “borrowed,” or seized from other ethnic groups, as well as botanical acquisitions for the purposes of increasing the productivity of colonies and new nations, and scientific research and collections.

Within this world of biological and cultural flows, ABS frameworks have struggled to lock down a mechanism that captures values for resources and knowledge. ABS might work easily in a world in which the geographies of genetic resources and associated TK are sufficiently static, where power imbalances do not exist, and where there are clear linkages between knowledge-holding individuals and groups, biological matter and information of actual or potential human use associated with this knowledge, and specific and identifiable places. But this is seldom, if ever, the case. Fish stocks straddle national frontiers and birds, insects, and other wildlife migrate between places that may be very distant. Although we have been able to develop international norms for the purposes of better wildlife management, this is possible because they are tangible and visible, their movements can be monitored, and their essential nature is not really a matter for debate. This is not the case for TKGR.

WHO BENEFITS?

Most international debates and national and regional schemes adopted to implement ABS recognise that TK should not be misappropriated. This is an important policy shift towards addressing biopiracy concerns and recognising the rights of TK holders. However, implementing these policies is challenging on many fronts, including pinpointing TKGR origin for the purposes of benefit sharing. Experiences the world over demonstrate the complexities of this approach.

To date, the catalyst for most ABS arrangements has been one of the following:

- TK bounded and identified with a specific group, which has received benefits on the basis of attribution (analogous to the author in copyright law);
- a TKGR-holding community, group, or representative organisation with strong and visible lobbying, negotiating and legal capacity, and which has been politically well-connected, organised, and aware of their rights;
- a group that has been the site of research and development (R&D) collections (known as “point of contact” in some ABS circles), or was the first contacted by a company or intermediary;
- a community or group whose knowledge appears to bear the closest relationship to a given commercial product.

However, consideration has seldom been given to what might be the most equitable arrangement on a broader scale, and rarely have efforts been made to identify the wide range of knowledge holders. The emphasis is usually on ease of administration, political connections, lobbying power, and capacity to engage with commercial partners and the global policy community.

CONCEPTUAL ERRORS UNDERPINNING ABS AND TKGR

Equitable arrangements within ABS policy and implementation tend to rely on the origin of TK being easy to identify in the sense of being both culturally and geographically bounded. But this is often not the case. A slew of conceptual errors underpin the assumptions of equity for TKGR within ABS:

- that TK is clearly identifiable, pure, unadulterated, and “all the better” for not being mixed with knowledge and technological inputs from elsewhere;
- that TK is attributable to a specific group or country, and does not cross cultural or geographic boundaries;
- that TK is static and unchanging; and
- that those engaging with communities to undertake research or develop commercial products understand the culture and history of the region and communities with whom they are entering into ABS agreements.

That TK is clearly identifiable, pure, and unadulterated

Other than the famous “Eureka moments,” the acquisition, adaptation and further development of knowledge, including what may appear to be entirely personal insights, is fundamentally a collective experience. Sometimes, the same TK is shared by Indigenous and non-Indigenous groups, both neighbouring and across the world. In such cases the bilateral approach to TK that is embodied by the CBD and Nagoya Protocol becomes problematic, and in effect pits communities and groups against each other. This scenario is one reason why there is increasing attention given to so-called multilateral approaches within these policy arenas.

Moreover, as knowledge is shared over time, it changes through cumulative improvements, adaptations, and combinations to suit new contexts and situations. Accordingly, it may be impossible, both factually and conceptually, to authoritatively attribute TK exclusively to any specific time, place, or people.

BUSH MANGO: A VALUABLE TRADITIONAL RESOURCE WITH BROAD CROSS-BOUNDARY DISTRIBUTION AND USE

Bush mango is one of the most widely used forest trees in Central and West Africa. The primary species for subsistence and commercial use are *Irvingia gabonensis* and *Irvingia wombulu*, both found in lowland tropical humid forests across a range that spans multiple national boundaries, including Nigeria, Cameroon, and Gabon.

For centuries, bush mango fruits have been used for subsistence purposes and sold. Multiple plant parts are utilised for medicine, to make utensils and mortars, for roof supports, to make dyes, and in other products, but the seeds provide the most important product, as a thickener for soups and stews. Bush mango is one of the most widely traded forest products in the humid forest zone, and is actively managed - retained on subsistence farms and fallows, and used as a shade tree on cocoa and other farms. Traditional knowledge about its uses and management varies by community and region, but is widely dispersed across the geographic range of these species.



Breaking bush mango nuts, Takamanda village, Cameroon.
Credit: Stella Asaha

Research that demonstrated a possible link between bush mango and weight loss, as an appetite suppressant and to reduce fat and cholesterol, spurred recent interest from international phytomedicine and nutraceutical companies. Today, dozens of products are sold in stores and on the internet around the world, some making claims about traditional uses of these species.

Traditional knowledge associated with bush mango, however, illustrates the challenges of developing appropriate benefit-sharing approaches when species cross cultural and geographic boundaries. While knowledge on the use, processing, storage and management of bush mango clearly grows from generations of traditional use, it is not possible to identify a particular community or group that could claim ownership over this broad (and still evolving) knowledge base.

A regional fund might be used in such cases to widely benefit communities in the region, but the transaction costs of managing such a fund are likely to outweigh benefits from the phytomedical or nutraceutical use of this species. Significant benefits already derive from local use and regional trade, and while greater benefits could accrue to harvesters in the value chain, ABS is not the appropriate tool to achieve this. Bilateral, and based on a transaction involving a researcher or company, ABS is poorly suited to create equitable arrangements for widely used traditional resources. Additionally, benefitting one group for the use of TK associated with bush mango is likely to create division and conflict, while potentially disrupting existing benefits and customary legal systems.

That TK is attributable to a specific group or country, and does not cross cultural or geographic boundaries

Bounded and identifiable TK underlies the approach of the Nagoya Protocol, which outwardly appears to strengthen the abilities of Indigenous peoples to secure fair and equitable shares of benefits from the utilisation of genetic resources and of TK “associated with” them. However, it is rarely the case that elements of knowledge traditions do have boundaries that can be “fixed” in time and space sufficient for claims of exclusivity to be defensible.

TKGR which can be associated with a single Indigenous community or people, or a few living in close proximity, clearly needs protection, but looking into the past in this way will not by itself allow a quick, fair, and equitable assessment of protectable TKGR under the CBD or Nagoya Protocol. To do so requires further investigating the linkages between communities and their rights, as well as historical, including colonial, displacements.

That TK is static and unchanging

It is commonly supposed that “tradition” and “modernity” operate in separate spheres, except where the modern incorporates tradition in a decontextualised fashion and then claims it as its own. Such an opposition between tradition and modernity is a fundamental assumption of post-Second World War modernisation theory, whose legacy informs much of the debate on biopiracy and benefit sharing. In this schema, there is little accommodation for hybridity, including its positive aspects for societies. At the same time, the concept of “tradition” has tended to be used negatively as something outmoded that implies some kind of pure condition that is not adulterated with or diluted by elements from other societies or transformed in any way endogenously: TK just *is* – it does not become. The contraction of “knowledge, innovations and practices” in Article 8(j) of the CBD to just plain “knowledge” in the Nagoya Protocol, albeit attached to genetic resources using the phrase “associated with,” hardly helps. It tends to downplay the creativity and adaptiveness of Indigenous groups of each generation, as well as other societies with tradition-based bodies of knowledge that they wish to protect but that have changed over time.

A clear example of hybridity between the “traditional” and “modern” is curare, used historically among communities in South America as an arrow poison, but now also used in a derived form as a surgical treatment. In addition, curare was utilised by scientists to study human physiology, initially for entirely non-commercial purposes. However, these findings were taken further by others with a more commercial motivation leading to the discovery of fluoxetine (Prozac) and other anti-depressants. From curare to Prozac is a massive transformation in material and cognitive terms. This extreme range between direct and more tangential connections can be a significant complicating factor in terms of who should benefit and to what extent.

That those engaging with communities understand the cultures and histories

Other conceptual errors include the assumption that NGOs, companies, researchers, and others working on TKGR are well-versed in the history, cultures, and customary laws of the people with whom they work. If communities are not well-organised or well-resourced, and if they do not have representatives familiar with markets and the private sector, ABS and global and national policy, local cultural and legal norms are often not incorporated into benefit-sharing arrangements. Global ABS concepts of benefit sharing are also rarely interrogated in light of local cultural and legal norms and are instead applied to local circumstances in unchanging form. The risk here is that well-intentioned international policies and laws might not benefit Indigenous and local communities, and could even work against their interests, by imposing externally driven values and approaches.

ROOIBOS. HYBRID KNOWLEDGE AND LOST CONNECTIONS

Mapping connections between natural products and genetic resources and Indigenous peoples can reveal both the hybridity of knowledge systems and past connections that were severed generations ago by colonial dispossession. For example, Indigenous San and Khoi peoples of Southern Africa were early users of rooibos (*Aspalathus linearis*), a plant that currently accounts for 10% of the global herbal tea trade. However, the well-documented genocide of San and the virtual enslavement of Khoi in rooibos-growing landscapes centuries ago was coupled with the dispossession of their traditional lands. The legacy of this history means that today, those who identify as San and Khoi are mostly geographically disconnected from the plant.

Indisputably, however, local knowledge played a key role in the development of the rooibos industry more than a century ago, and since 2010, Indigenous San and Khoi organisations have demanded that the industry recognise their role as primary knowledge holders. A 2014 government-sponsored report concluded there was “no evidence to dispute this claim” and required the rooibos industry to negotiate a benefit-sharing agreement with the participating San and Khoi organisations. Driven by concerns that they would not receive a license to operate without this agreement, the rooibos industry entered into a series of protracted negotiations with the South African San Council and the National Khoisan Council (and their legal representatives), facilitated by the Department of Environmental Affairs. In March 2019, a benefit-sharing agreement was finally signed.

The agreement recognises the role played by TK in the development of the industry and allocates a “TK levy” calculated at 1.5% of the price that processors pay to farmers per kilogram of harvested rooibos. After being deposited into the government’s bioprospecting trust fund, the levy is to be paid in equal parts to the San Council and National Khoisan Council. While a TK levy can never erase colonial violence, representatives in the organisations have expressed that the ABS agreement went a long way towards recognising San and Khoi as peoples who possess a deep connection to the rooibos land.



Rooibos harvesting in the Cederberg mountains, South Africa.
Credit: Rodger Bosch

The rooibos story, however, does not end there. Colonial persecution in the region continued with apartheid policies, including the relocation, disenfranchisement, and ongoing marginalisation of local coloured and black people. Knowledge of rooibos was largely lost by San and Khoi who were moved thousands of kilometres away. Yet the knowledge was retained by the small-scale rooibos farmers and farmworkers who remained. But these mixed-race descendants of European settlers, former slaves, and Khoi and San do not readily identify as “Indigenous” – instead, many claim and celebrate a “coloured” or “brown” identity.

Despite their “hybrid” heritage, many in the local coloured population express a strong sense that they are the original owners of rooibos knowledge because they believe their forebearers were the original users of the plant and because they have worked, lived, and loved the rooibos land for as long as their ancestral memories can trace. Even if they do not identify culturally as Khoi or San, most recognise that they are San and Khoi descendants. The population has also contributed in numerous ways to the success of the rooibos industry. These contributions

included momentous discoveries by individuals such as Tryntjie Swarts, a local woman who located the “golden nests” of rooibos seed in the 1920s and thus facilitated the industry’s expansion. Whose knowledge counts in this complex, dynamic context? Under the current rooibos ABS agreement, government-recognised San and Khoi organisations are sole beneficiaries. Small-scale coloured farmers and farmworkers were largely left out of the negotiating process for compensation and eventually included only through the National Khoisan Council. These coloured residents were labelled “Rooibos indigenous farming communities” — defined as “rural farming communities in rooibos growing areas who consist of descendants of original Khoi-Khoi peoples.” They are to receive a portion from the trust set up for Khoi people, although the exact proportion has not yet been determined.

Because they lack the bureaucratic experience and lobbying power of the San and Khoi organisations, the coloured population remains marginalised, and their voices unheard. Moreover, in a bureaucratic twist, these same small-scale farmers are now required to pay the 1.5% levy to San and Khoi organisations, leading to a great deal of conflict. Here, the notion of “priority” may well have created more problems than it has solved. Even if those currently marginalised are able to obtain the resources to organise, does the current framing of the TKGR and its emphasis on a “pure” notion of tradition allow for coloured claims?

Although lauded by some as the long-awaited example of how Indigenous peoples can benefit from ABS, the case raises key unresolved questions about the ownership of knowledge, the way in which ABS inadvertently shapes identity, and the uncritical conflation of ABS with social and economic justice.

WHAT THIS MEANS FOR LEGAL PROTECTION AND ABS POLICY

Laws and policies to implement TKGR protection have included:

- intellectual property law, including by introducing disclosure of origin requirements and exploring the use of trademarks and geographical indications;
- *sui generis* (“of its own kind”) legislation for specific protection of TKGR;
- ABS regulatory frameworks;
- or combinations of these.

These approaches all tend to be based on the assumption that capturing and sharing the benefits of TK fairly and equitably is feasible. As noted, it is not clear that this is the case, for a range of reasons:

- TK can, and frequently does, co-evolve and hybridise with knowledge from “modern” sources;
- TK and associated genetic resources are not static, pure, and unadulterated, nor are they bounded with fixed origins; and
- Seeds, plants, and associated knowledge are in fact very hard to “fix” in time and space, and tend to not have clear origins.

Because bilateral ABS frameworks assume that TK can be associated with a specific place and people, it is hard to see how TKGR that is of uncertain origin can be “captured” by the same legal framework.

ABS policy implications:

- The complexity and attention that these issues require is not easily dealt with at a policy level. It requires comprehensive social research, savvy policy-makers, and considerable political maneuvering. The answers are not always appetizing and do not have mass political appeal. Nor do they have easily implementable solutions.

- An increasing number of cases are pointing towards the fact that the bilateral and transactional approach of ABS is not an appropriate vehicle to achieve equity and justice, especially where TK is involved.
- It may well be time to open the debate to alternative and arguably more radical approaches to benefit sharing. One possibility could include abandoning the problematic term “traditional” and looking towards solutions that embed equity and social justice in an explicit way, while still recognizing Indigenous claims.
- At the international level, alternatives might include regional and multilateral approaches that are more inclusive as to beneficiaries and more equitable in terms of how benefits are apportioned. Ongoing discussion regarding Articles 10 (Global multilateral benefit-sharing mechanism) and 11 (Transboundary cooperation) of the Nagoya Protocol may provide useful spaces to consider such alternatives, although numerous governance and implementation challenges face this approach, including cost and time effectiveness.
- Most important, perhaps, is to open a dialogue to consider what might work in practice. For too long, policy dialogue on the issue of TKGR has been stuck in a paradigm that does not reflect the realities of TKGR for Indigenous and local communities. A reality and justice check is long overdue.

SHARED KNOWLEDGE OF THE RESURRECTION BUSH ACROSS GEOGRAPHIES AND CULTURES – By Michelle Nott

Myrothamnus flabellifolia, commonly known as the “resurrection bush,” is widely distributed across Southern Africa, its range including South Africa, Mozambique, Malawi, Tanzania, Zimbabwe, Namibia, Botswana, and Kenya. Throughout the region, it is used traditionally by a variety of Indigenous and local communities. These include Himba and Shona in Namibia and Zimbabwe respectively, who use the plant as a tea to treat cold and flu symptoms. This knowledge has proved of interest to the international health and beverage industries.

A unique feature of the resurrection bush is its ability to drastically dehydrate its vegetative tissue and exist in this air-dried, dormant state for months or even years. When water is provided to the roots, the plant rehydrates its desiccated tissues and returns to its original state within a matter of hours. Due to this remarkable property, the species is also attracting attention from those in the cosmetics industry for use in skincare products.

Given this increased interest, ABS agreements have been adopted to equitably share the benefits derived from its use. However, the cross-border nature of the species means that ABS regulatory approaches have been implemented very differently, making equitable benefit sharing a challenge. Identifying TK holders is also difficult due to the vast coverage of the species and the diversity of uses amongst different cultural groups.



Harvesting the resurrection bush in Zimbabwe.

Credit: David Brazier

Some governments in the region have advocated for a database of TK holders in order to adequately implement transboundary cooperation, including the possibility of an association where all commercial activities connected to the resurrection bush can be negotiated and benefits shared equitably. This links to the thinking of Article 10 of the Nagoya Protocol which encourages parties to adopt a multilateral benefit-sharing approach in cases where a bilateral agreement cannot be negotiated. Substantial work remains, however, to ascertain the feasibility of such an approach and how it might be implemented, including whether the benefits generated by such a system would outweigh the costs. A key component would include contributions to the sustainable use and long-term conservation of the species.

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ACKNOWLEDGEMENTS

Voices for BioJustice is supported by the Darwin Initiative (Darwin Project 24017: “Access and Benefit Sharing in Policy and Practice: Community, Science and Policy”, April 2017 – March 2020), The South African Research Chairs Initiative of the National Research Foundation, The Christensen Fund, and Woods and Wayside International. Jaci van Niekerk provided editing and coordination, and Fahdelah Hartley design.

Citation Dutfield, G., Wynberg, R., Laird, S. and Ives, S. 2020. Benefit Sharing and Traditional Knowledge: Unsolved Dilemmas for Implementation. *The Challenge of Attribution and Origin: Traditional Knowledge and Access and Benefit Sharing*. Voices for BioJustice, Policy Brief.

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PEOPLE & PLANTS

