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Between hope and hype: Traditional knowledge(s) held by marginal communities

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Abstract

Traditional Knowledge (TK) systems have always been integral to the survival and adaptation of human societies. They are particularly important to local, marginalized communities that govern TK within a common property regime. This study borrows the notion of “hype” – a term often invoked in popular science – to problematize how institutional recognition, and public and scientific popularization of TK together with its implications for marginal communities could be studied. By drawing upon economic theories and in employing narrative analysis in a study of international protocols, we identify five underlying motives or drivers that shape and sustain the popularization of TK: an equality preference motive, a value motive, a compliance motive, a scarcity motive and a strategic motive. We then turn our attention to understanding how the popularization of TK has impacted different types of marginality through an analysis of case studies, followed by a discussion of policy instruments that focus on TK to protect marginal communities. We specify four types of marginality: communities that are positively integrated, adversely integrated, those that voluntarily exclude themselves, or could never expect to be integrated. We argue that whilst the public and institutional hype around TK may have resulted in its prioritization within international developmental, environmental and trade governance frameworks, its formalization and subsequent institutionalization may have adversely impacted marginalized communities, and in particular contexts, unintentionally led to the creation of “new” marginals. We purport that the traditional innovation incentive motive does not hold for protecting TK within a private property regime. Instead we identify two other motives, a conservation incentive motive that essentially is an efficiency motive and a distribution motive, that justify deriving policy instruments (that focus on TK) to protect marginal communities.

Key words: traditional knowledge; marginality; common property regime; social welfare; community participation

1. Introduction

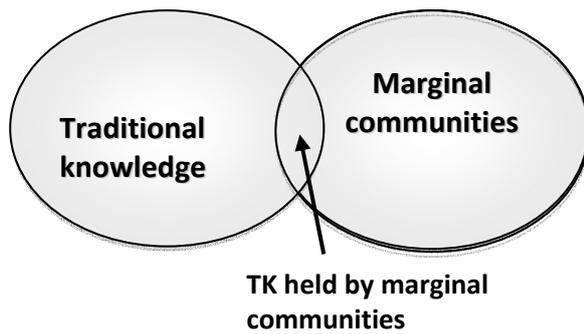
The concept of Traditional Knowledge (TK) enjoys increasing popularity among politicians, scientists and the wider public. Literature from different disciplines and popular writings deal with TK – most often with such TK that is held by marginal communities. To date, there is very little literature within the disciplines of economics, law, and the social and environmental sciences that draw an explicit link between the use and ownership of traditional knowledge by local communities and its relevance to different types or states of marginality.¹ Academic scholarship and policy analyses allude to the fact that TK (in its plurality) can be conceptualized as shared community resource, given its centrality to local livelihood securities, and in providing the basis for material and bio-cultural survival and adaptation. In most cases TK is governed by a common property regime, it is a resource that exists and evolves endogenously within a community. Irrefutably however, not all aspects of TK – or what is packaged as being ‘traditional’ – are necessarily beneficial to local communities (cf. Briggs, 2005). Furthermore, not all members of a particular community may enjoy equivalent rights of access and/or use to the same stock of knowledge (Gerke and Ehlert, 2009, p. 2).

On the other hand, interlinks between TK use and ownership and its relationship to community, household and individual marginalization are not as clear-cut. As *Figure 1* illustrates, not all marginal communities may use or have access to the kind of TK practices that would be beneficial to them; similarly, TK forms may be accessed, collectively used and owned by non-marginal local communities, and other entities.

Local communities have held traditional knowledge on, for example, curing a certain disease for decades, whereas a pharmaceutical firm ‘discovered’ their application recently and used it to develop professional pharmaceuticals (the same applies to bio- and agrotechnology, and others). The story of knowledge traditionally held by local and indigenous communities perfectly mirrors the fate of the TK concept. Traditional knowledge

¹We draw on the definition of marginality as an involuntary position and condition of an individual or group at the margins of social, political, economic, ecological and biophysical systems, preventing them from access to resources, assets, services, restraining freedom of choice, preventing the development of capabilities, and eventually causing extreme poverty (Gatzweiler et.al, 2011). To derive a more understanding of different states around marginality, we will be considering the categories of social exclusion as well as what Hickey and Du Toit have termed as “adverse incorporation” (see Hickey and Du Toit 2007, pp. 4).

Figure 1: Traditional knowledge held by marginal communities



Source: own

forms have existed in human societies since time immemorial, but academics and other scientists, politicians, the media, NGOs, corporates and the wider public ‘discovered’ it (for themselves) fairly recently. We refer to this recent recognition and popularization of TK as ‘hype’.

Furthermore, we favor using the term ‘traditional knowledge’ or TK (as opposed to indigenous, folk or local knowledge) given its existing popularity within developmental nomenclature, policymaking and in the vocabularies of international protocols.² To this day, TK remains a highly contested concept. Similarly, the variety of terms including indigenous knowledge, folk science, and local knowledge among others that are being used, contain their own problematic conceptual assumptions, with their notions of tradition, community, indigeneity and meanings around what constitutes localness (cf. Robbins 2000; Dove 2006). However, we intentionally framed our analysis around to the term *traditional knowledge*, in the way it appears as concept and buzzword in scientific, corporate, development and public discourse. For conceptual clarity, we have built our definition of TK by drawing upon the work of Nakashima and Roue (2002, p. 315) and Berkes (cf. Mazzocchi 2006). In this context we conceptualize TK as a complex assemblage of knowledge, know-how, practices, values and meanings that guide societies in their daily interactions with the socio-natural world, which in turn continue to evolve through adaptive strategies in the face of socio-ecological change; these knowledge forms are usually

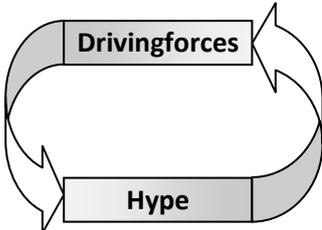
²To this day, traditional knowledge (TK) remains a highly embattled concept. Furthermore a variety of terms including indigenous knowledge, folk science, and local knowledge among others, that are being used similarly contain their own problematic conceptual assumptions, with their notions of community, indigeneity, geographic scale, and meanings around what constitutes localness (cf. Robbins 2000; Dove 2006).

context-specific, and may often (though not always), be transmitted inter-generationally. Our contention with ongoing debates around the meanings, values and benefits of TK arises from the sheer degree of complexity underpinning these analyses.

This paper is concerned first of all in unveiling the different narratives that continue to refashion TK as a buzzword and boundary concept (cf. Mollinga 2010). In drawing upon economic theories and in borrowing methods from narrative analysis largely within the social sciences,³ we tease out some of the key driving forces, underlying rationales or **motives that led to the popularity of TK**. The second major focus lies on the **impact of this TK popularization on marginal communities** (otherwise referred to as marginals). We are interested in understanding how western-centric popularization and its emergent practices around TK formalization and institutionalization influences **different types of marginality**. Furthermore, we dismantle the emotional-ideologically influenced demand to use privatization of TK as an instrument to protect marginal communities. We discuss three **arguments for the protection of TK and marginal communities** as well as **potential policy instruments**.

It has yet to be seen, whether widespread attention paid to marginal communities possessing TK is in vogue only in the short-term – as *hype* – or would prove to be of long-term importance in terms of yielding tangible benefits to the communities from which they are drawn. We foresee TK held by marginals might gain long term importance, if the hype further pushes the initial driving forces and ignites them in other members of the society. We frame this as the *hope* for individuals having a preference for equality. Given these individuals, the hype might be sustained through a self-reinforcing process:

Figure 2: The dynamic between TK hype and its driving forces



Source: own

³In this context, we have treated narratives as interpretive devices, focusing on the ways in which institutions, in particular, create and use stories to interpret their world (cf. Lawler 2002)

Our analysis primarily draws upon secondary, i.e. desktop research, of available policy documents and case studies within economics, the social sciences, conservation biology and legal studies. This study is limited to understanding public and institutional popularity of TK, and we do not include an analysis of TK concepts and formalization processes from the standpoint of marginals themselves. In this context, the paucity of appropriate case-study material remains a challenge. Secondly, we do not provide a detailed analysis on how the formalization of TK impacts marginals along different scalar dimensions of the local, national, regional and international, which in turn has a bearing on how rights to access, use and benefit sharing are shaped and negotiated. We focus primarily on the external forces that shape the popularization of TK, with little emphasis on states of marginality that are *internally* created by formal and informal structures within communities of TK Commons themselves. Furthermore, a detailed analysis on the underlying power structures which create, shape and maintain these spaces go beyond the scope of our study.

The paper is organised as follows: In Section 2 we introduce the concept of TK and provide a short review of the implicit debates around TK held by marginals within the disciplines of economics and social science. Next, in Section 3 we turn to the underlying motives that play a role in shaping and driving the popularity of TK within different spheres of public welfare, commercial and developmental contexts. In Section 4 we describe the implications the ‘hype’. We first address the impacts on heterogeneous marginal communities and then turn to analyse policy instruments advocated to protect TK and the marginals who depend on these knowledge forms. Finally, we conclude in Section 5.

2. The concept of traditional knowledge held by marginal communities

In this section we elucidate the origins of traditional knowledge as a public good as well as a socio-politically embedded concept (subsection 2.1). We argue that the formalisation process of traditional knowledge use and ownership by marginals created three legacies, inter alia the notion or boundary concept of the TK Commons. We will discuss the nature of TK as a good, together with its potential governance regimes, one of which entails a common property regime (subsection 2.2).

2.1 The 'invention' of traditional knowledge and its relevance to marginality

Diverse forms of knowledge have accompanied humankind over millennia of environmental change and cultural adaptation. As a number of scholars have argued, the societies that developed their own traditional knowledge forms did not wait for official recognition of their practices before forming their own socio-natural landscapes, through agro-ecological systems of food production, the domestication of plants and animals, and complex medicinal practices among others, which to this day, continue to play a major role in the global economy (Agrawal 1995; Nakashima and Roue 2002; Dove 2006). As Noyes (2010, p. 4) asserts, traditional knowledge and cultural forms come with their own unique natural histories, which should in the least be seen in terms of evolutionary “progress”, but more as a complex set of lifeworlds that have undergone cyclical processes of adaptation with remarkable ingenuity and tenacity.

The study of what we perceive, as TK today, is hardly new in the face of early anthropological inquiry. In naming a few such as Levi-Strauss' seminal study 'The Savage Mind' (1962) together with Allan's 'The African Husbandman' (1965), the salience of indigenous (traditional) knowledge gradually took shape within social scientific imagination (see Briggs and Sharpe 2004). Yet arguably, these projects were themselves guided by the need to valorise folk knowledge beyond their narrow framing as survival strategies, and as systems that were equally sophisticated and comparable with western knowledge and science (cf. Briggs 2005). What we could see as constituting a body of 'legitimizing scholarship,' took on another and more political form, encompassed in the idea of TK as a suitable countervailing force to the top-down narratives of modernist, global development. For example, the Institute of Development Studies' (IDS, Sussex) first bulletin, with its explicit reference to indigenous knowledge in 1979, bears testimony to this (ibid, p. 4).

There is little substantive literature tracing the evolution and entrance of the term 'traditional knowledge' into international commercial, environmental and development rhetoric. However, the (re)emergence of TK could be attributed to the 1992 UN Conference on Environment and Development (or the Rio Earth Summit). The seemingly exchangeable terms traditional and indigenous knowledge were first incorporated into the Convention

on Biological Diversity (CBD), together with Agenda 21, and the first global consensus on forests – the Statement of Forest Principles (cf. Martello 2001, p. 122). Arguably, the Rio Summit was also instrumental in coining a number of different operational definitions and categories of traditional knowledge, for example, the term ‘traditional forest-related knowledge’ (or TFRK), a concept that later gained renewed salience within property rights regimes. However, Rio left behind three legacies.

Firstly, there never was a consensus (or debate), on what could be defined as traditional or indigenous knowledge (Nakashima and Roue 2002). The old catchphrases and buzzwords continue to confuse, polarize and draw attention away from more pressing debates on power asymmetries between TK-holders, and their ‘intermediaries’ who may possess the power to define, translate and formalize this knowledge. The second legacy that Rio left was its notion of TK as a panacea that could be invoked to arrest the Eurocentric, authoritarian and de-politicizing currents of western science, global development (and environmental) practices (cf. Escobar 1995; Ziai 2010). Ironically, however, if it were to be seen as a panacea that would solve the ‘development impasse’ of the 80s, there was little political reference of TK, its relevance towards redressing power asymmetries and socio-political inequalities among the poor, vulnerable and the marginalized, in terms of who participates in decision-making and what it means to participate. Arguably, the politics of marginality was implicit in these early projects of TK formalization⁴ and institutionalization, though it was by no means apolitical.

We now arrive at the third legacy of Rio – the conception of the TK Commons, i.e. TK as a common property resource. TK commons is an often imprecisely used term and common property resource a melange of concepts (common pool resource, common property regime, cf. Hess and Ostrom 2003, p. 119 ff.), because one does not differentiate between the characteristics of the good TK and its governance regime. We will therefore address this legacy in more detail from a socio-economic perspective in the next subsection.

⁴By formalization, we refer to the interpretation, transmission and integration of TK into the formal knowledge base within a community institutional or policy context.

2.2 Traditional knowledge commons

In this subsection we will discuss the third legacy, TK commons, and clarify the nature of the good TK and the property regimes it is governed by. Two parameters – exclusion and rivalry – classify goods on a continuous scale ranging from purely private to purely public goods. Exclusion refers to the possibility to prevent someone using a resource; rivalry expresses whether the use of the good by one user conflicts with the use of this good by someone else. TK is characterized by the properties ‘difficult exclusion’ and ‘non rivalry’. TK can therefore economically be conceptualized as a *public good*– not a common pool good (a common pool good has the property ‘high rivalry’). In contrast to public natural resource goods like the atmosphere, use of knowledge is beneficial, rather than neutral, for the preservation of the public good. Machlup (1983, p. 641) depicts knowledge as information plus its application capability. Resource use, i.e. information application, contributes to knowledge survival, growth and improvement. The nature of TK is similar to public and scientific knowledge. Nevertheless they tend to be governed by different institutions.

Hess and Ostrom (2003, p. 119 ff.) stress the difference between the nature of a good and its property regime; a public good as any other type of good can be governed by different property regimes. A basic classification distinguishes between private property, common property and open access regimes. Open access to knowledge does not lead to a tragedy (of open access) as in the case of natural resources (Dutfield 1999, p. 4), because knowledge does not diminish with extensive use. However, knowledge can be under threat by non-use. Local communities that perceive themselves as knowledge custodians (e.g. Abrell 2010, p. 7) ensure the survival of knowledge – so that it eventually becomes traditional knowledge. The communities are tightly linked to TK. Therefore we refer to our research object ‘communities with traditional knowledge’ as *traditional knowledge commons*, meaning, a community that governs TK under a common property regime.

Common property regimes consist of internal rights and duties. Access, withdrawal, management, exclusion and alienation rights (Schlager and Ostrom 1992) determine the community’s internal governance structure of TK. We adapt the specification of the rights at the operational level defined by Schlager and Ostrom (1992) to apply to TK; access de-

scribes the right to be familiarized with a certain knowledge and withdrawal the right to obtain benefits from applying the knowledge. The analysis of different sets of rights is important to understand the incentives various community members have to preserve their TK and the impact a commercialization has for them. Members with rights at operational level enjoy less power and influence in the community structured around TK than those with collective choice rights. However, it is important to note that community members might also be marginalized as a result of the internal governance structure of the TK Commons, particularly in cases where certain groups within a community might be excluded from knowledge access.

Private property regimes that govern knowledge often take the form of patents; with technological and pharmaceutical knowledge this governing regime has become increasingly popular. Patenting serves as a temporary private property solution to create incentives for invention and research. It is a policy instrument to facilitate the provision of a public good, i.e. to overcome the free-rider incentive. Patents move knowledge out of the public domain for a certain time span. Scientific knowledge remains a public good. After the end of the patent, the private property regime, it can be governed by a common property regime (e.g. generic medicals) or by open access.

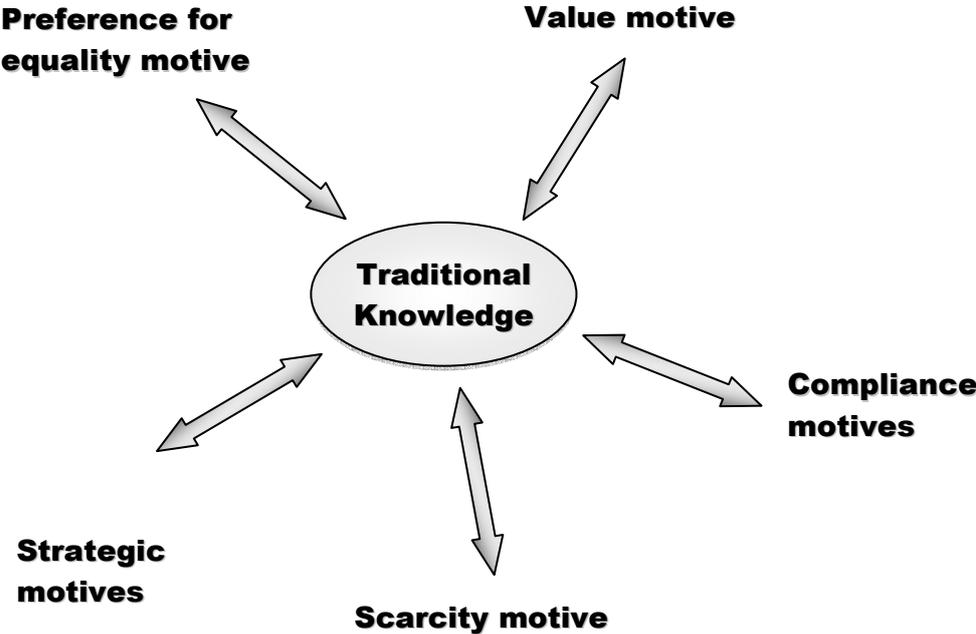
Intellectual property laws are a Euro-American institutional setting driven by an invention incentive motive, which remunerates new knowledge. TK cannot be patented on innovation grounds. However, privatization could serve different ends with TK. As mentioned earlier, TK is threatened by non-use. Instruments could be designed to remunerate TK holders for their service as TK custodians. It has to be seen though, whether privatization along the lines of western intellectual property regimes is adequate and compatible, particularly with reference to TK conservation (and in protecting marginalized communities).

3. The hype around traditional knowledge held by marginal communities

In this section we present a number of driving forces or motives, spurring, scientific, commercial, and policy attention being paid to TK ownership by marginals. The factors we have identified are by no means exhaustive. We distinguish five motives: an **equality preference motive** (subsection 3.1), a **value motive** (subsection 3.2), a **compliance mo-**

ive (subsection 3.3), a **scarcity motive** (subsection 3.4), and a **strategic motive** (subsection 3.5).

Figure 3: Underlying motives/driving forces shaping the popularisation of TK



Source: own

3.1 Equality preference motive

TK held by marginals is in vogue, if a significant number of individuals have a preference for equality. Empathy and altruism can influence individuals’ decisions and acting. They can gain utility from moral satisfaction. The normative convictions of an individual influence her preference for the shaping of society. The equality dimension of a society will be the focus of this subsection; we will thus take an external normative perspective and use concepts from welfare economics. These welfare concepts differ inter alia in their consideration of distributional aspects. Thus, coming from the internal individual perspective, individuals’ normative convictions drive the preference for different normative welfare concepts. Typically individuals have a preference for how society or the government

should maximise its social welfare. In the following arguments laid out, we consider how far different welfare concepts serve to explain the hype around TK held by marginals, i.e. which concepts consider distributional aspects, the driver ‘preference for equality’.

The Utilitarian concept, whose most influential fathers are Jeremy Bentham and John Stuart Mill, uses a social welfare function to maximise a society’s welfare. The relative distribution of utility between individuals is unimportant in this concept, only the total welfare matters: the social welfare function is sum of the inhabitants’ utility functions and individual utility is a function of individual consumption. The utility of a person is thus independent of utility of another person, i.e. no externalities of utilities exist. The utilitarian welfare function reads:

$$W(C_{NM}, C_M) = U(C_{NM}) + U(C_M) ,$$

whereby W denotes welfare, U utility, C consumption, NM non-marginals, and M marginals. Note that the maximisation can result in a process of equalisation for some functional forms. For utility functions that exhibit diminishing marginal returns to, for example, consumption, the utilitarian welfare maximisation advises society to allocate resources first to the poor in order to maximise the sum of utilities, because the poor get a higher utility from one unit of consumption than the rich. As explained above, the Utilitarian concept does not, however, consider equality preferences as such. Individuals with such conviction would not choose a utilitarian concept to maximise social welfare.

Whereas the utilitarian approach analyses a society concentrating on the welfare outcome, deontology considers the societal processes themselves. The deontological libertarian approach (e.g. Nozick 1974) takes a rights-based perspective. Maximising the basic rights of individuals maximises welfare:

$$\max W(R) ,$$

where R is a vector of all basic rights which are identical for non-marginals and marginals: $R = R_1, \dots, R_n$. Basic rights as defined by these libertarians are not equal to human rights. They are negative rights, e.g. no one has the right to harm you, or no one has the right to take away your income which you have rightly earned. The liberal approach serves to explain the increased interest in and concern for marginals which are marginal because they are excluded from basic rights, but not for poor and other socio-economically vulnerable marginals. Libertarians consider a distribution just that is the outcome of a process in

which everyone enjoyed the liberty of exchange and advocate the free market as asset distributor within a society. One important implication for TK is that local communities have the right to require exchange for sharing their knowledge (as they own it). Another implication is that the land and environment local communities live in belongs to them and cannot simply be 'expropriated'. Finally, the libertarian approach justifies redistribution to compensate for historic violation of property rights – this is highly relevant regarding the unequal land distribution which is a result of aggressive invasion into their territory by western countries – albeit generally, there is no scope for government redistribution policies.

Thirdly, we will present the egalitarian concept of John Rawls⁵. Rawls's concept is motivated by social contract theory. If individuals take decisions on asset allocation within a society under the famous 'veil of ignorance', the shaping of society will definitely be driven by a preference for equality – inter alia of marginals and non-marginals. Rawls claims that individuals would grant everyone the same basic liberties that do not interfere with another person's liberties (Rawls 1971, p. 60). Individuals will furthermore want to *maximise* the *minimum* utility belonging to some person or group in society. Rawls's maximin concept can be expressed by a welfare function. It can be considered as a very special case of the utilitarian welfare function: In the case of infinitely risk averse individuals and insecurity concerning the initial distribution of resources, the utilitarian welfare function converges to Rawls's welfare function:

$$W(C_{NM}, C_M) = \min (U(C_{NM}), U(C_M)).$$

Rawls's welfare function states that only an increase in utility of the least off individual, in our case of marginals $U(C_M)$, will increase social welfare (Rawls 1971, p. 303). A conviction of individuals that one should decide upon the shaping of society under a veil of ignorance will drive their concern about marginals and create the mentioned hype.

3.2 The value motive

The aspiration of reaping considerable benefits from the commercialization of TK associated with biological resources for both providers and users manifested itself at the Earth Summit in Rio de Janeiro in 1992. People increasingly recognized the value of TK (associ-

⁵Some egalitarian scholars critique Rawls for focusing on basic social goods. They argue for a broader concept of equality, e.g. equality of opportunity (John Roemer) and equality of real freedoms (Amartya Sen).

ated with biological resources). The United Nations' Convention on Biological Diversity (CBD) and its later documents pay considerable consideration to TK. It obliges every contracting party to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices" (CBD 1992, Article 8(j)). Numerous initiatives and most prominently the Nagoya Protocol to the CBD from 2010 aim to initiate a fair and equitable process of access and benefit sharing of assumed valuable indigenous and local communities' TK that increases mutual welfare.

Background to this effort is the realization – or possibly merely the hope – that TK is in itself valuable. The overall value of TK is difficult to estimate. Economic research differentiates between two main types of values: use values and non-use values (e.g. Perman et al. 2003, p. 402). The estimation of non-use values is most challenging and requires (perfect) information about the individuals' preferences for TK. Those preferences are difficult to elicit; current valuation concepts using Willingness-To-Pay and Willingness-To-Accept measure very rough values. Determining use values is easier; often the market price is a sufficient approximation of the use value. TK, however, is limitedly valued (directly) over the market. The occidental intellectual property institutions largely concentrate on market-based intellectual property rights that are not easily compatible with TK and thus few market values for TK exist. However, scholars try to find ways to reconcile the two institutional systems (e.g. Downes 2000). The National Innovations Foundation (NIF) India filed 469 patents on behalf of innovators of grassroots innovations, which largely build on TK, in India and the United States (Gupta 2011). Bioprospecting⁶ contracts between (pharmaceutical / biotechnology) companies and local communities define remuneration for the use of TK. Both monetary benefits such as royalties and non-monetary benefits like education, joint research and development or research facilities (which also have a monetary

⁶ Bioprospecting involves searching for, collecting, and deriving genetic material from samples of biodiversity that can be used in commercialized pharmaceutical, agricultural, industrial, or chemical processing end products.

value) value the TK. In the famous Hoodia case the San, an indigenous community from the southern part of Africa, successfully fought for a six percent royalty rate from all pharmaceutical product sales developed out of their knowledge on the use of the Hoodia plant (Wynberg 2004). Since the Nagoya Protocol, agreements on TK are an essential part of Access and Benefit Sharing (ABS) contracts as defined under the CBD (CBD 2010; Kamau et al. 2010, p. 252). Several local communities establish their own bio-cultural protocols to formalize the commercialization of their TK (Abrell 2010, p. 6 ff.). Most of these contracts are however under disclosure and therefore do reveal the fact that TK has a use value, but not the exact figure. Nevertheless, some products are known to be derived from TK although there has never been an agreement signed and the owners of this knowledge have never participated in the benefits. According to Posey (1990, p. 15), who draws on data from the Fundaqao Brasileira de Plantas Mediciniais, “the annual world market value for medicines derived from medicinal plants discovered from indigenous peoples is US\$43 billion”. TK is also valuable for development cooperation agencies and environmental organizations; many include TK in their project portfolios (eg. Kassam 2002; Dove 2006). Market valuation only captures part of the use value individuals obtain from TK, i.e. the use that is exchanged via markets. TK is one of those assets which largely operate outside the formal market, especially in indigenous and local communities. Holders of TK benefit from their TK in almost every sphere of their life: from mere survival and adaptation, to leisure and community belonging (Noyes 2010, p. 2).

Individuals value TK not only because they obtain use from it today, but also because they themselves will obtain use from it in the future (indirect use value = option value). The option value covers the insurance value of TK; it is closely related to the individual’s risk aversion. Individuals with a high-risk aversion, and this may be particular true of marginals vulnerable to external shocks, value TK as an insurance, which increases the potential to cope or adapt to unexpected events, more. High option values for TK reduce the individual’s discount rate. They are willing to invest in the perseverance of TK and are reluctant to alter the existing TK commons. Individuals from developed countries are as likely to have high option values as are members of the community holding TK or individuals from the community’s country. TK provides a valuable knowledge pool for high tech products. It inspired the research for numerous pharmaceutical products, such as the

already mentioned appetite suppressant (Wynberg 2004) or Eli Lilly's medicine for childhood leukemia originating from Vinca Rosea used by locals in Madagascar (Rubin 1994, p. 27). Farnsworth et al. (1985, p. 967) identified that the plant used for a pharmaceutical has a similar use in traditional medicine for 74 % of their examined 119 pharmaceuticals.

Non-use values are more intangible. Economists disaggregate non-use values into bequest values and existence values. The former exists whenever individuals want to conserve TK for their offspring for use or as insurance, although they themselves do not profit from it. If individuals value the pure existence of TK although they or their offspring will never have the chance to use it, they assign an existence value to TK.

3.3 Compliance motives

We now turn to considering the hype around TK in relation to its value as a *socio-political* resource. We look at what we call the 'compliance' motive that in part, served to popularize TK, at least within international governance regimes. Arguably the political value behind formalizing TK lay in its promise of serving as a leveraging tool to discipline (perceptibly unfavorable) policies of nation states. This notion, in particular, is implicitly articulated within frameworks of international environmental governance regimes that appeared since Rio.

Since the late 80s and 90s, the 'fines and fences' approach to biodiversity conservation came under increasing scrutiny, not least of all among global environmental governance actors who were once the very proponents of top-down approaches to protected area management (cf. McCarthy 2006). Whilst some of the earliest concepts around Community-based Natural Resource Management (CBRM) and co-management were taking shape, rights-based approaches to social development were being articulated around the same time. Thus, formalizing TK as a new conservation instrument lay in the recognition that biodiversity-dense places were also the living spaces of indigenous and land-based marginals, and that different aspects of TK shows promise of addressing socio-environmental complexities, in ways that modern science and technology did not (cf. Dudgeon and Berkes 2003, p.86). By virtue of what was packaged as their (sustainable) dependence on the local natural resource base, notions around custodianship and stewardship came into vogue. The mantra maintained that in order to protect marginal biodi-

iversity under threat, it was necessary to protect the belief systems of marginal communities whose very survival seemed dependent on the existence and continuity of a healthy local natural resource base.

However, within a post-Rio context, the possibility of upholding, legitimizing and maintaining 'sustainable' TK practices were in part dependent on the degree to which socio-political structures of nation-state were in themselves inclusive. Thus, upon closer reading of international environmental protocols as well as developmental policy documents that were forged during Rio and after, a strong thematic connection could be seen between the duty of states to safeguard TK and concomitantly to protect its own natural resources and ecosystems. For example, Agenda 21 (1992), Section 26.3 maintains that: "Governments should aim to recognize the values, traditional knowledge and resource management practices of indigenous people with a view to promoting sustainable development." In a similar vein, Forest Principles (1992), Principle 5, unambiguously draws attention to "national forest policies" and their imperative to "recognize, support the identity, culture and rights of indigenous people, their communities, and other communities of forest dwellers." At face value, these clauses strengthen the imperative of the nation state to enact ecologically sound and sustainable resource management policies. Implicitly however, the formalization of TK can be seen as a means by keeping contentious local and national policies in checks and balances, vis-à-vis by upholding TK's existential value and by legitimizing its use by marginalized communities and thereby bolstering their bargaining power within the realpolitik of nation state. Thus, this compliance rationale is more relevant within the context of national policymaking, through which underlying moralities and rationalities of individual state initiatives are measured against the rules and norms ascribed by global governance regimes.

Arguably however, the formalization practices of TK and the processes in which they are translated into local contexts can be highly politicized, in part because they contain the legacies of complex historical conflicts between communities, colonizing powers and modern nation-states. Furthermore, as Martello (2001, p. 130) concurs, there remains a lot to be said about the 'hollowness' underlying the institutional formalization of TK within the global spaces of conventions, governance institutions and their international proto-

cols in which “rights and traditional knowledge belong in separate places.” Therefore, one is said to exist as an empty notion without the other.

3.4 The scarcity motive

A second socio-political rationale that, in part, drives the hype behind TK is embedded in its framing as a scarce resource. This notion is closely interlinked with the use and option values of preserving TK, given its foreseeable benefit in the future. However, we expose the problems of the scarcity rationale given its inherent danger of framing TK as a supposedly relatively homogenous, static and pristine entity, given its perceived rarity and its threat of disappearance as a result of ‘modern’ change and transition. Interestingly, the vocabulary used by institutions stressing on the necessity to ‘archive’ TK, bears a striking similarity to narratives around the conservation of biological diversity. The United Nations Convention to Combat Desertification (UNCDD 1994) details the necessity to save “locally-situated” knowledge forms from disappearance and suggests mechanisms to achieve this goal. In this context, TK takes on the identity of a resource that needs to be protected, most of all from the globalizing, commercialist dangers of market forces. In part, this preservationist narrative can be glimpsed in the UNCCD, Article 18 (2) which stipulates that: “...Parties shall...promote, use, and make inventories of relevant traditional knowledge, know-how and practices and their use...disseminate such information; protect such technology, knowledge, know-how and practices and ensure that local populations benefit from commercial uses...facilitate as appropriate, the adaptation of such technology...to wider use and integrate them with modern technology, as appropriate.” (cf. Martello 2001, p. 120). Several arguments can be drawn from this excerpt.

Firstly, it raises a number of problems by drawing attention to the politics behind the ex-situ preservation of TK in often centralized and bureaucratically organized databases (cf. Agrawal 1995). The implicit notion of immortalizing (appropriate) forms of TK often tends to not simply compartmentalize different practices, but also places them within a particular historic and contextual time-freeze. Simpson (2001) recounts how 19th century traditional fishing practices among the Nanuvut, for example, were codified by Euro-Canadian researchers and officials, which allowed First Nations communities little bargaining power

in understanding how relatively low-impact nevertheless newer technologies could be accepted and legalized.

The second implication behind scarcity rationales lies in the paradox of having to ‘scale-up’ TK practices, and de-linking it from its local contexts. As Martello (2001, p. 125) argues, it bears the implicit assumption that TK could be made portable and universal in a way that western science is. In other words, the scaling up of TK practices and know-how seems akin to modern technology transfers. This notion runs counter to the conceptualization of TK Commons as custodians of their own knowledge, As Martello asserts (p. 125): “how will the rights, beliefs and customs of TK holders be protected if such knowledge is to be [made] portable?”

Lastly, a number of scholars have argued that western scientific discourses have, in part, been maintained by the construction of crisis narratives (Hoppers 2002; Briggs and Sharpe 2004). Arguably, discourses that draw distinctions between bad versus sound and policy-led versus evidence-based science span almost every socio-ecological arena – from climatology and soil science, to forestry and water management for example. It could therefore be argued that the importance of TK could be seen within a similar context: a context in which it has been invoked as a scarce resource – by virtue of its recognition a panacea that holds promise of countervailing exclusionary state policies, top-down development practices and unsustainable forms of resource use and management, among a litany of others. Yet, it is this very notion of scarcity (intrinsicly bound to notions of ‘traditionality’), which in part, spurs the hype behind the formalization of TK, and leaves it equally vulnerable.

3.5 Strategic motives

Since Rio, TK has been increasingly ‘mainstreamed’ as a generic biodiversity conservation and development tool (cf. Briggs 2005). Whilst a vast corpus of literature exists on the adverse effects that mainstreaming and institutionalizing TK has had, there has been less of a focus on the institutional processes that underbelly the popularization of TK. We draw on the notion of TK as a strategic resource (cf. Gerke and Ehlert 2009). In adapting this concept to institutional settings, arguably knowledge encounters too can be perceived as being strategically motivated.

Normatively, TK has often been declared as a means of enriching policy processes – and also as a means of redressing the failure of top-down formal development strategies through the “inclusion of local voices and priorities, and promises of empowerment through the ownership of the [development] process...” (Briggs and Sharpe 2004, p. 6). Today, it would not be very difficult to witness the inclusion of TK and its variations in developmental and environmental planning agendas, such as including it in water management, agro-ecological farming, community dispute settlement, fisheries and forestry co-management among others. Many have drawn parallels between development projects that ‘enlist’ community participation in order to legitimize certain organizational or policy agendas in a broader sense (cf. Cooke and Kothari 2001), and the enthusiasm to integrate TK – however loosely – into development practice and scientific planning templates. However, it would be over-simplistic to argue that the hype behind TK, in part, could be attributed to its perceived ability to fulfill narrow institutional self-interests. Yet, mainstream development practices often advocate for the value of TK as an effective and cost-efficient platform to build strategic partnerships with local communities. In this context, we could see TK as an instrument in facilitating what Robert Putnam and others would call bridging social capital. It is here that TK’s value as a boundary concept for trans-disciplinary work could be seen in pulling together scientific communities and local “communities of practice.” (cf. Gerke and Ehler 2009, p. 6).

Nonetheless, one could question the extent to which these ‘processes of inclusion’ allow communities, particularly marginals, to define their own priorities and shape decision-making trajectories. For example, the World Bank directive, ‘Indigenous Knowledge for Development: A Framework for Action’ –frames TK as an under-utilized resource in combating poverty. It conceives TK (through its specific reference to indigenous knowledge) as “a significant *resource*, which could contribute to the increased efficiency, effectiveness and sustainability of the development process.” (World Bank 1998). Here, the efficiency rationale is very much entangled with the notion of TK’s as a strategic (social) capital, which in turn helps bridge or to draw connections between organizational development agendas and its ability to address the wellbeing of marginals. Interestingly, much of the Bank’s literature comprises elaborate listings of different TK use-values in contexts that shape poverty. However, very little is shared on the operational processes concerning the iden-

tification and interpretation of TK practices through which they can be translated into “effective development practice” – a catchphrase often invoked in the Bank’s literature.

It may seem, however, that these strategic linkages happen through a one-way dynamic of institutions that are able to selectively ‘extract’ those aspects of TK that seem to be in keeping with organizational agendas. The extent to which these brokered partnerships and these institutional encounters inclusively foster real knowledge exchange and sharing is under scrutiny. Furthermore, critics have questioned the sectoral division of such organizations and working groups that rely on intermediaries to translate TK into portable coherent packages which their expert-led epistemic communities may easily interpret and re-frame. Martello (2001, p. 197) for example, draws attention to the UNCCD’s Ad Hoc Panel on Traditional Knowledge, citing that its dual mission of engendering local participation whilst guaranteeing organizational efficiency meant bringing in “knowledgeable local actors” which hardly went beyond a roistering process. Whilst there is little critical scholarship to date charting how TK formalization practices have included marginals in decision-making or problem-solving within narrow development frames, the spaces in which this ‘sharing’ happens, and the practices that shape them, are telling of the underlying power/knowledge dynamics at play. #

In sum, the five driving motives we have identified are not mutually exclusive and neither are they exhaustive. At first glance, they may seem relatively disparate. However, the driving forces identified bear important implications to the popularity underlying TK: They will influence whether its promises remain a hype or a sustained commitment to protecting marginal communities – or at best, in strengthening the capacity of marginals to advance their wellbeing. If individuals have a preference for equality, they will opt for an egalitarian concept to maximize social welfare. In case individuals assign high use, option and existence values to TK, it enjoys a good chance of being preserved. Given these conditions, policy instruments focusing on TK are promising to protect marginal communities. Socio-politically driven motives identified serve to sustain the commitment of TK if it fulfills some of its implicit promises namely those of policy compliance and forging strategic partnerships with local communities in an effort to improve the efficiency and effectiveness of development agendas.

4. The implications of the hype

After having examined different motives that drive the popularity of TK held by marginal communities, we now address the implications of this hype. In this section we first discuss how the increasing attention paid to TK by politicians, scientists and the wider public affected marginal communities (Subsection 4.1). We acknowledge that the impact plays out differently with heterogeneous communities: Our typology includes four categories of TK-holders; those who have been positively or adversely integrated, those who have voluntarily chosen to leave the system, and lastly, those who have no claim to possessing ‘traditional knowledge’ – the ‘new marginals’. Subsequently, in Subsection 4.2 we critically assess the emotional-ideologically influenced demand to use privatization of TK as an instrument to protect marginal communities. We discuss three arguments for the protection of TK and marginal communities as well as potential instruments.

4.1 The impact for heterogeneous marginal communities

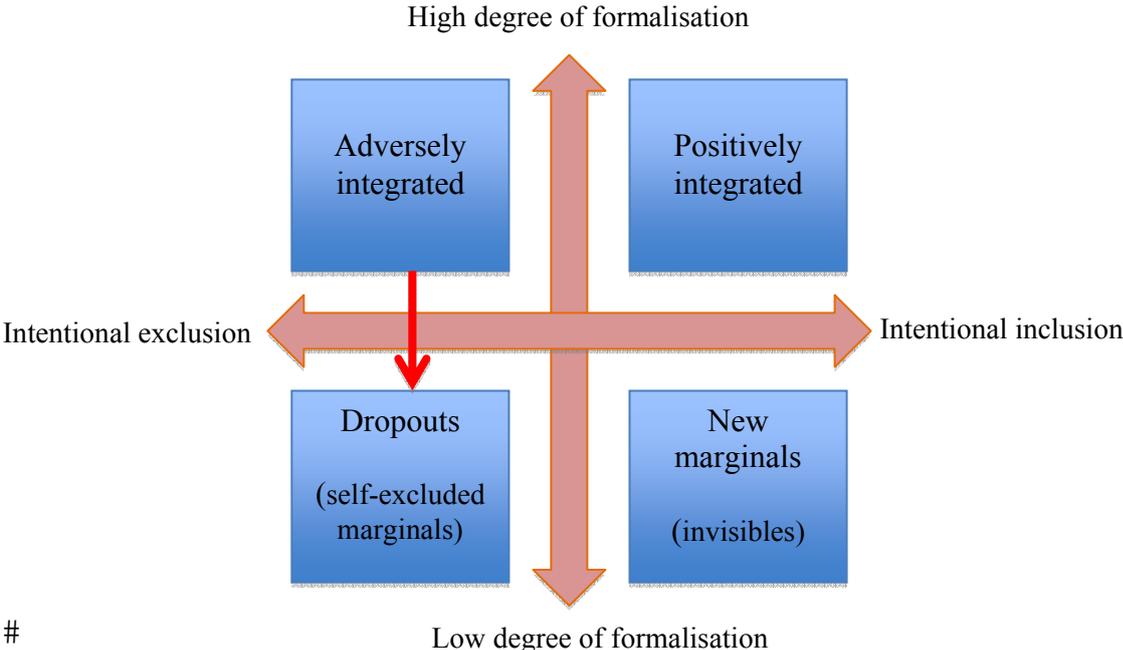
Voluminous literature within the social sciences, as well as within environmental and legal studies among others, draws ample attention to the fact that traditional, indigenous and local communities have stood to lose out – to varying degrees – during instances in which their bio-cultural knowledge systems were seemingly institutionalized (cf. Dudgeon and Berkes 2003; Rimmer 2003). However, much of these analyses reveal little of how the integration of TK within diverse scientific, bureaucratic, commercial, environmental and developmental paradigms have created spaces of social inclusion and exclusion, enfranchised or dispossessed local communities during these processes of encounter.

Firstly it is important to identify that local communities possessing TK are immensely heterogeneous themselves. Therefore, we do not focus much on who stands to lose or gain from the formalization of TK, but we are more interested in understanding how these encounters are determined by a complex set of interrelated factors which in turn impact the positions of marginality that communities occupy. These factors may include the *form and extent of the TK formalization process*, the *geographic scale* in which they are seen to unfold, and the degree to which local communities wish to *participate* or on the other hand, *voluntarily exclude* themselves. In tracing the different institutional notions around TK, which run through the case-study material studied, we present four spaces that TK-

holders viz. local communities may occupy as a result of the formalization process of their knowledge systems.

These categories are merely abstractions, and should serve as heuristic constructs to help understand how the integration of TK simultaneously includes as much as it excludes, dispossesses as much as it enfranchises communities. Our typology includes four categories of marginal TK-holders; those who have been positively integrated, those adversely integrated (to varying degrees during its formalization), those who have voluntarily chosen to leave the system (i.e. “drop-outs”), and lastly, those who have no claim to possessing ‘traditional knowledge’ within the narrow scope of definitional term that is adopted. We see this last category as entailing a set of ‘new’ marginals that TK formalization processes may unintentionally create.

Figure 4: The spaces of marginality in relation to TK formalization processes and the willingness of communities to participate



Source: own

TK holders we see as being *positively integrated* may derive diverse benefits in their institutional partnerships and contractual agreements. These may vary markedly due to the extent to which these communities hold bargaining power in defining what counts as knowledge, how their worldviews are to be interpreted and the extent of their decision-

making capacities, together with their ability to conjointly determine the outcomes of such collaborations. Relatively convincing success stories can be drawn from literature on community-based natural resource management (CBRM) and co-management arrangements, though a vast number of them do also fail. For example, the Alaskan Beluga Whale Committee (ABWC) entailed a co-management group formed in the wake of the Bowhead Whaling Moratorium crisis of 1977, and comprised native hunters drawn from over 40 Beluga whale-hunting villages together with fisheries scientists (Fernandez-Gimenez et al. 2006). The success of this partnership could, in part, be attributed to the transdisciplinary synthesis of Inuit TK practices and know-how in monitoring Beluga populations, which required the fluidity of researcher roles: Inuit hunters often accompanied scientists during aerial surveys, and scientists were seen to actively help hunters in the work of processing post-harvest catch to obtain tissue samples (ibid, p. 312). Whilst a detailed explanation of what is seen to work in such partnerships goes beyond the scope of this analysis, it could however be inferred that neither western science nor TK was given an epistemic privilege during the participatory process. A further example is the bio-cultural protocol drafted by healers from the Bushbuckridge area in South Africa (see Subsection 4.2). In the bio-cultural protocol the healers clearly define access regulations for their knowledge and thereby retain the power and ownership over their knowledge, i.e. they succeeded in governing their TK under their common property regime – while simultaneously interacting with the outside world.

Our second category comprises those who are *adversely integrated*⁷ into systems of TK formalization. The question of scale matters in this context, as most TK partnerships that succeed often do so in localized contexts. The spaces in which TK formalization processes fail largely happen within the regimes of Intellectual Property Rights (IPR). Whilst we have drawn attention to the inability of contemporary IPRs in protecting TK-holders, their very ownership structures around the concept of ‘legal personality’ serve to exclude marginal communities. Firstly, many are seen to lack the requisite legal or juridical personality on the basis of which they can hold IPRs. Secondly, many of these communities lack the fi-

⁷This category would be very similar to Hickey and Du Toit’s conception of “adverse incorporation” (2007, pp. 4) drawing on the work of Geof Wood, that describes differential forms of integration into state, market and civil society spheres which in turn create adverse conditions for communities which were, otherwise still marginalized or more so.

nancial power to register and service IPRs, particularly with respect to the costly patenting process. Furthermore, most high profile IP infringement cases happen across borders, within global networks that are far beyond the reach of many local communities (Oguamanam 2004, p. 142 - 144). In this context, we see marginal communities as being integrated into formal TK systems, however, the degree of agency that they have in stipulating their own benefit-sharing expectations determine how disadvantageous their position would be. Thus, their position in a global IPR regime for example, could be characterized as a form of negative integration.

The third category entails a sub-set of marginal communities that intentionally opt or *drop out* of TK formalization processes. They may have once encompassed a sub-set of the second category, in which institutional encounters were seen to fail them. This position could be characterized by low levels of TK formalization/institutionalization, as in the case of the Canadian First Nations communities that Simpson (2001) writes of. She argues that with decades of selective inclusion, appropriation and misinterpretation of TK in an effort to integrate these worldviews into western-scientific rationalities through numerous environmental impact assessments and participatory action research exercises, a number of local communities have instead, put up barriers to entry. The Nunavut, for example, require outsiders to obtain a license before they are allowed to enter, whilst another Inuit community was seen to be initiating a moratorium on research altogether (ibid, p. 140 ff.). Whilst we could term their position as one of voluntary peripheralization, these communities do not necessarily see themselves as “marginal” due to their considerable degree of agency to determine when and how they want to see themselves integrated. At times this may lead to bottom-up cultural revitalizations of hybrid customary and ‘new’ practices (for example, in the case of Rotionohshonni of the Kanawake), by virtue of the fact that they are able to occupy spaces in the periphery (ibid, p. 143 ff.). As bell hooks (1990, p. 342 ff.) writes “marginality is much more than a site of deprivation, [it is also the opposite]: a site of resistance,” offering communities the possibility of access to other points of reference that the ‘center’ has denied them.

The fourth and last category comprises new’ marginals, which the institutional hype behind TK is seen to create. These communities may often be lacking in the *claim* to possess traditional, ‘indigenous’ or local knowledge practices by virtue of the way in which TK is

narrowly defined or conceived. The possibility of being positively integrated into TK institutional clusters tends to be bleak, although they may be likely to benefit from such partnerships. For example, the Indian federations of highland Ecuador were seen to move away from 'purist' traditional practices. They did this by embracing the use of Green Revolution technologies as "a part of a strategy they still conceive as being 'indigenous' because of its overall objective to sustain a material base that would offset out-migration, a problem perceived as a far more serious threat to their indigenous identity than any incorporation of new technology" (Bebbington 1993, p. 274). In this context, institutional meanings around 'traditionality' may run the risk of excluding valuable knowledge systems developed by local farmers for instance, as "situated agents" who are equally experimental in their local practices (ibid, p. 286).⁸

In sum, the track record of TK formalization processes – and the benefits that its institutional hype is seen to yield, is indubitably a mixed one. It is important that we closely consider the occupation of 'traditional' spaces, knowledge practices and the ways in which they change over time. The hype behind TK formalization occupies both economic and political spaces: it is imagined as a public good and common pool resource, whilst at the same time a strategic one by virtue of its ability to be appropriated and politicized.

4.2 Policy instruments focusing on TK to protect marginal communities

If TK was the most important knowledge base of the poor and marginal, the normative argument would maintain that protecting TK would implicitly protect marginal communities. It is along these lines, and from the motif of TK as a *resource* in a multiplicity of ways, that the popularity of TK held by marginals is largely channeled. Indeed the demand for creating intellectual property rights (IPR) for traditional knowledge is already on the table (e.g. Downes 2000). Bluntly put, the reasoning is that once IPR on TK are established, companies, universities and others will queue to get hold of TK and pay the marginal communities a fortune. The threat, however, is that the 'hype' carries the proponents of

⁸Furthermore, this categorisation created 'new' ideological differences between Chimborazo Indians of Ecuador. One camp was more in favour of low-input farming and rejected 'modern' agri-technologies, which they saw as being linked to western capitalism. The other camp comprised "developmentalist" federations that endorsed and promoted agricultural extension and input supply programs. Whilst these ideological differences proved to be stark, one is left questioning the kind of alternatives which poor and marginalised communities had at their disposal if they were to survive on TK practices alone (cf. Bebbington 1993).

this argument away on an emotional-ideological path that is not based on sound arguments. In the following, we will therefore discuss three potential arguments for a change in the property regime of TK.

We start with the traditional innovation incentive argument that drives IPR such as patents. As discussed in Subsection 2.2 IPR privatize new knowledge for a certain time-span to remunerate the investments made in knowledge generation. IPR are necessary in cases where the share of individually appropriable benefits from the generated public good knowledge is lower than the investment costs. In such cases knowledge innovations would not take place without IPR. Ideally, IPR should only move knowledge out of the public domain as long as it takes to internalize enough positive externalities to pay off the investment costs. It is obvious that this innovation incentive argument does not hold for the privatization of TK. TK is already there, it does not need to be invented.

However, there exists a different incentive argument, a conservation incentive argument. If TK is of value for individuals and societies, the beneficiaries have an interest in its conservation. Public action to conserve TK, however, might fail due to high transaction costs and a strong free rider incentive. The benefits local communities generate as custodians of TK take the form of positive externalities for non-community members. An internalization of these externalities, which levels off conservation costs, would – as with the innovation incentive discussed above – suffice to secure TK conservation.

This conservation incentive argument is, in essence, an *efficiency argument* and spans not only the use value but also the potential use value in the future, the option value. The option value essential is the insurance value (see Subsection 3.2). The efficiency argument compares the potential opportunity costs of TK loss with the costs of securing its continued existence. If the cost-benefit analysis concludes that the maintenance costs of TK are lower than its use value plus insurance value, TK should be conserved:

$$\text{Cost} \leq \text{Use Value} + \text{Option Value}.$$

Although this conservation incentive argument has similarities to the innovation incentive argument, important differences exist with regard to the nature of the costs which are used in the cost-benefit analysis, i.e. the costs which ultimately determine whether conservation is efficient. Conservation costs have a hybrid nature that does not just include

monetary costs. It also involved tremendous transaction costs. The paying principal does not have perfect information on the value of the knowledge, on the internal community structure and thereby on the incentives community members have to cooperate, and on how a transfer will translate into TK conservation. An important multi-layered Principal-Agent Problem has to be overcome in order to initiate such conservation measure and ensure its efficiency.

In case the efficiency argument is not sufficient to implement a TK conservation measure, i.e. if the cost-benefit analysis is negative, a *distribution argument* might still demand and justify the protection of TK. In case individuals have preferences for equality, they would opt for an egalitarian social welfare maximization. Considering Rawls's welfare function:

$$W(C_{NM}, C_M) = \min (U(C_{NM}), U(C_M)),$$

social welfare only increases if the utility of marginal communities $U(C_M)$ is increased. Therefore, realizing some form of transfers is social welfare increasing. The distribution argument alone suffices to justify transfers for marginal communities in the absence of an efficiency argument, if equality preferences are strong. If the efficiency argument does not provide enough justification for TK protection, a transfer that focuses on TK could be justified by the sum of the two arguments. For the distribution argument any transfer is adequate, including one focusing on TK. It has to be noted, however, that a transfer focusing on TK does not reach all marginal communities. It is only targeted at the positively or adversely integrated. Thereby such transfer fulfils the efficiency argument but only partly the distribution argument as the dropouts and new marginals are not reached. This does not cause a dilemma, however, because in case society has the conviction that the transfer should also reach these marginal communities, the equality preference is strong enough for the distribution argument to justify a transfer not focused on TK.

Having discussed three potential arguments for securing the existence of TK and of marginal communities, we now consider potential policy instruments used for protection. First, we examine how TK could be protected (by a change in property regime). We already stated that a temporary change in the property regime of TK from a common property regime to a private property regime is not appropriate. Integration of TK in IPRs systems are one cause of negative integration. Others have argued in favor of 'de-globalising' contemporary international property regimes, and of developing sui generis

mechanisms that are nested in local knowledge-protection protocols (Rimmer 2003; Oguamanam, 2004). Common property regimes have proven to be a suitable property regime; they secured TK over generations. However, a property regime has to be acknowledged also by non-community members. Until recently, communities holding TK have been largely shielded from the outside world. The increasing connection between these two worlds endangers the functioning of the common property regime. An important measure therefore already is the universal recognition of local communities as TK custodians. For TK on biological resources the CBD has taken this step in Article 8(j) (CBD 1992). The interpretation of this article by traditional healers from the Bushbuckridge area in South Africa supports this reasoning: They "did not want to interpret Article 8(j) as providing them with a title deed over their knowledge since they already saw themselves as its custodians. They instead interpreted it as guaranteeing a right to ensure that their knowledge would be used in accordance with their customary laws." (Abrell, p. 7). Article 8(j) has to be implemented jointly with the local communities and trans-disciplinary research is required on how to include TK in the Access-and-Benefit-Sharing mechanism of the CBD. Several communities have drafted bio-cultural protocols, which could be a starting point⁹. The communities define the access conditions to their TK based on their communities internal laws and practices in these protocols (Abrell, p. 7).

Secondly, we briefly point at transfers that are not related to TK. An unconditional transfer is justifiable, if we start from the distribution argument. The underlying assumption here is that a monetary transfer directly contributes to increasing $U(C_M)$, the marginal communities' utility, and thereby social welfare. This direct link has to be questioned, however. Local and indigenous communities often derive their utility from non-consumption goods (cf. Nakashima and Roue 2002), but even if we take utility as a function of consumption, marginal communities might live in remote areas where access to consumption goods is not given or goods of their consumption preference might not be sold over the (monetary) market. Another, possibly superior option might be to secure the rights over the land on which marginal communities live. By protecting their land, the communities have the possibility to continue their way of life (which often indirectly re-

⁹However, they pose the problem that the negotiation sovereignty lies with nation states rather than local communities.

sults in TK conservation). Securing land rights could possibly be one way of avoiding the condition of adverse integration, as it may partially help to safeguard the material base on which marginals depend. However, this option would be better suited to land-based communities; hence this option is less likely to positively impact seasonal migrants and nomadic communities. Still, it should remain the communities' decision whether they want to be positively integrated or whether they wish to drop out of the TK formalization processes altogether.

5. Conclusion

This study has lent some clarity to the driving motives of the recent hype or popularization of traditional knowledge held by marginal communities and how this process impacted marginals. We started by clarifying that although TK has existed as a resource since historic times, it was only recently formalized and these institutional processes helped reinforce its recognition and popularity. We intimated that the concept of TK Commons is correctly understood as TK governed by a common property regime, whereas TK is a public good by nature. TK is by no means static, and the marginals that draw upon it are by no means homogenous or 'traditional' in a purist sense.

In unpicking the occidental 'hype' around TK, we teased out five underlying motives that may drive and sustain the popularity of TK: an equality preference motive, a value motive, a compliance motive, a scarcity motive, and a strategic motive. In the second part of our analysis, we proceeded to critically examine the implications of TK's popularity (with particular reference to its formalisation) for heterogeneous marginal communities. Our typology includes four categories of TK-holders: those who have been positively integrated, those adversely integrated, those who have voluntarily chosen to leave the system, and lastly, those who have no claim to possessing 'traditional knowledge' – the 'new marginals'. We argue that in order to understand how the formalization of TK impacts the marginality of local communities, it is essential to consider how tightly or loosely bound communities are to these institutional systems, and the extent to which they choose to voluntarily include or exclude themselves from these processes.

We argue that the 'hype' around TK held by marginals can be beneficial for these marginal communities if it is driven by an equality preference motive. However, in some con-

texts the popularization of TK – however long or short-lived it may be – comes at a price: marginals themselves may lose the power to define how they wish to use and protect their own knowledge bases. Thus, we see the popularization behind TK ownership by marginals – as a double edged sword, one that precariously rests between hope and hype. Instrumental motives driving the advocacy of TK may also yield unintentional adverse effects by essentializing these knowledge forms as timeless, monolithic and unchanging. We went as far as stating that the institutionalization of TK has the propensity of creating new spaces of marginality by virtue of the fact that it may exclude certain communities.

Finally, we addressed the demand for privatizing TK, which we perceive as motivated by an emotional-ideological facet of the hype around TK held by marginals. We therefore worked out three sound arguments that potentially hold for a protection of TK and marginal communities: the traditional innovation incentive argument (which does not hold), a conservation incentive argument that is essentially an efficiency argument, and a distribution argument. Based on these arguments we discussed the relevance of several policy instruments. As TK has been successfully governed by common property regimes over decades, recognition of and maintaining this governance form seems more promising than creating a private property regime. If the distribution argument is most important, a policy instrument should not focus on TK to protect marginal communities as it leaves out the ‘dropouts’ and ‘new marginals’. Instead, unconditional transfers or securing land rights are potential instruments.

The paper attempts – besides contributing to a clarification of the debates around TK held by marginal communities – to draw on literature and findings from different disciplines in order to add to an interdisciplinary dialogue on marginal communities that are custodians of TK. So far, the discussion has largely been confined to the social sciences – and economics have only considered cases with respect to bioprospecting and ABS contracts. Further research should aim at intensifying this interdisciplinary research and attempt to also include the worldviews of marginal communities. It is also likely that considering the formalization of TK and its impacts on marginal communities along different administrative scalar dimensions of the local, national, regional and international will add substantial new insights to the findings of this study.

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