Challenges of Namibian administrative structure to implement the Access to genetic resources and Benefit Sharing legislation[†]

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ABSTRACT
Starting in the 1980s discussion regarding how to manage and govern transactions of genetic resources and related traditional knowledge has been increasing. With the United Nations Convention on Biological Diversity (UN-CBD) and later the Nagoya Protocol, institutions have been developed in this area intended to regulate access to genetic resources and the sharing of associated benefits (ABS). The basic idea of ABS is to create the missing governance structure that can regulate the allocation of these valuable resources and the associated transaction flows of biotrade such that transferred benefits serve as incentives for ensuring that local communities can continue in-situ resource conservation. ABS was conceptualized as the third objective of the UN-CBD and formalised as an international agreement in the Nagoya Protocol, which mandates signatories to enforce it through national legislation. The present text addresses the case of Namibia, a lead country in ABS negotiations, considering the mechanisms by which its ABS legislation has been implemented. This study depicts the Namibian administrative context within which ABS governance policies are implemented, using the analytical framework of Hagedorn's Institutions of Sustainability, which is based on transaction cost theory and the concept of bounded rationality drawn from Simon. We explore ABS legislation implementation as a problem of administrative resource allocation, related to rules concerning how the administrative work that is characteristics of bureaucracies is assigned and shared, including how power and resources are distributed and how this impacts actor motivations. Following Charmaz, a methodology of grounded theory with abduction was employed to collect qualitative used in the study. We find that the administrative scope and functions of the ABS legislation are regulated by numerous ministries, with the Ministry of Environment and Tourism holding asymmetric power advantages, and designed institutional performance, including the formation of multi-stakeholder administrative body, entailing problems associated with information allocation, distribution of rights and mandates, and in the allocation and distribution of human resources across ministries. Our study suggests that power asymmetries between actors, in terms of jurisdiction, control of financial resources, information, and enforcement rights, associated with different rationalities, appear to play an important role in constraining implementation. We anticipate that co-administration of a meta-agency would be the lowest cost implementation option and suggest that the mechanisms of the implementation problem encountered in Namibia can be logically explained through reference to the concepts of Hagedorn's IoS and addressed by giving closer attention to the mechanisms involved.

KEYWORDS: power, Institutions of Sustainability, information transactions, Access to genetic resources and Benefit Sharing (ABS), Namibian ministerial structure

INTRODUCTION

Background

Since the 1980s problems with and the need to alter conventional international schemes for transactions of genetic resources and related traditional knowledge have been increasingly discussed. Up until that time this knowledge was transferred from local and indigenous communities to international users with little or no attention to the rights of local and indigenous communities. International users have been and continue to include pharmaceutical companies, plant producers, and food manufactures, all of which use this knowledge to specify ingredients for use in their commercial products. This had led to discussion of the question: how to regulate access to genetic resources and benefit sharing (ABS) (Porzecanski et al. 1999; Andersen 2005; Laird and Wynberg 2008). The idea of ABS

was conceptualized as the third objective of the United Nations Convention on Biological Diversity (UN-CBD) (UN 1993; CBD, Article 1) and institutionalized through the Nagoya Protocol (UN 2011). Each signatory party to the UN-CBD is mandated to implement national legislation that should serve to establish the ABS contract enforcement institutions. This implementation procedure aims to create a missing global institutional framework to address two main problems in conventional biotrade related to the misevaluation of the value of genetic resources and related traditional knowledge through bioprospecting activities, including misevaluation of the value of research and development activities and biotrade itself (Richerzhagen and Virchow 2002). On the one hand, there is the problem of misevaluation of dynamically changing values, as the value of genetic resources is constantly being transformed as new processes and uses are discovered, and since potential future uses remain identified. Diverse actors study various genetic resources to identify their characteristics and potential for further commercial uses, based on which a biotrade in a genetic resource starts (Polsky 2005) and expands. This leads to difficulties in regulating bioprospecting activities based on the terms of contract (Dedeurwaerdere 2005). On the other is the lack of consideration given to the contribution made by the continual sustainable uses of local communities toward conservation and improvement of the genetic resources and related traditional knowledge. Based on the adaptation of farmers' rights to include new property rights that internalize these ignored or underestimated values (Barbier 2000; Anderson 2005), the ABS institutional framework, composed of ABS contracts and national enforcement institutions, associated with national ABS legislation, is supposed to regulate trade-offs between benefits arising from the use of genetic resources, which is supposed to work as an incentive for *in-situ* resource conservation.

Following adoption of the CBD, ABS policy has been developed in Namibia since 1994, led by initiatives within the Ministry of Environment and Tourism (MET) and later with the Ministry of Agriculture, Water and Regional Development (MAWRD) as well numerous ad hoc working groups, including, the biotrade working group (ARD 2008, 77) and the National Biotrade and Bioprospecting Programme of the MET as well as the Indigenous Plant Task Team (IPTT) of the MAWRD[1]. In 2007, following the mandate for the MET to implement multilateral environmental agreements, the Namibian cabinet assigned the MET to administer the country's ABS legislation as a part of the UN-CBD and the also the associated ABS administrative body, the Interim Bio-Prospecting Committee (IBPC). These institutional measure were designed to be implemented during a period of adjustment of the present Namibian governmental structure, composed of various ministries, within a larger transition processes of 55 planned changes. However, the ABS implementation plan was still not completely designed in 2011, at the time the present study was completed, and the legislation remains yet to be implemented today.

Aims of the research and analytical framework

In order to understand this implementation failure as a question of how rules-making and its adaptation are conducted or suspended in the Namibian governmental structure, this study uses Hagedorn's Institutions of Sustainability (IoS) analytical framework (Hagedorn 2008). The IoS provides a basis for developing logical explanations regarding how mechanisms of institutional change are operating in specific cases. Its conceptual structure is based on reference to four decomposed elements - transactions, actors, institutions, and governance structures - and the action arena, where they meet. The transaction, as the basic unit of

[1] In 1994 the first governance structure on the ABS was established as the Namibian National Biodiversity Programme under the MET (Margules 2000: 1).

analysis, is presumed to craft interactions among actors (in the present study among different ministries), which are regulated by the institutions under governance structures (in the present study hierarchical bureaucracy). The main transacted elements in this study are information, human resources, finances, administrative mandates and jurisdictional decision rights. Institutions are understood here as "humanly devised constraints that shape human interactions (North 1990, 3)" and are assumed to include both formal constraints, such as state laws, and informal constraints, such as norms of behaviours of bureaucrats. Governance structures are understood here as systems of rules and instruments that serve the enforcement of formal rules (Williamson 1975). Following Williamson's (2000) four level model of economic institutions, the mechanism of institutional change to be studied here, including their implementations, can be viewed as interactions across four nested realms: social embeddedness, constituted of social norms regarding behaviours, values and beliefs (changing very slow for over 100 years); institutional environment and property rights (changing slow over decades); governance and formal rules (changing within a few years); and allocation of natural, financial and human resources (changing continuously).

Based on this composite framework we employ an understanding of power based in Simon's (1979) definition of bounded rationality, applied here specifically to understanding the rationality of bureaucrats and their asymmetrical bargaining relations. We relate this to the limited scope of entitled decision making rights, which can be understood to serve as a determining factor contributing to the absence of smoothly designed and implemented institutional changes in Namibian ABS administrative structures. Following Simon (1979), the individual character of all rationality can be understood to imply the impossibility of acquiring unlimited knowledge. Bureaucrats in the studied agencies are expected to be demotivated to cooperate for and adapt designed institutional changes because of their limited knowledge regarding costs of the transactions involved in achieving implementation and because of perceived losses of vested benefits, including rights and mandates. Bargaining power is understood here as the ability of economic actors to achieve outcomes that favour their specific distributional interests (Farrell and Knight 2003, 544), in our study this is reflecting in the ability to convince other bureaucrats to select action choices under asymmetrical power relations between those who hold rights and those who do not. Based on these presumed characteristics of the bureaucrat in our study, we depict the implementation problems in the ABS related Namibian ministries with two action arenas: (i) the ABS contract enforcement institution, discussing institutional interplays of the designed ABS laws and present Namibian state laws, and (ii) its implementation mechanism for allocation of resources, as well as rights and duties among ministries.

Employing the conventional use of the concept of transaction costs, we assume that decisions concerning implementation of the ABS governance structure can be understood to follow a predictable logic: that implementation will proceed only when expected net benefits from implementation, adjusted for potential ex-post transaction costs for its operation, are estimated to be higher than the ex-ante transaction costs, take as initial costs for its implementation. It is presumed that the government officers in question select administrative action choices not as perfect rational actors but with bounded rationality.

METHODS

We employed surveys of the Namibian ABS governance structures and political context based on documents published by ministries in question, complemented by semi-structured and unstructured interviews with seven key informants during fieldworks in the capital, Windhoek, and in the North Central region of Namibia, in 2011. Documents and literature

included a draft of the Namibian ABS bill (MET 2006), its basic model, the Bonn Guidelines (CBD 2002) and the Organisation of African Unity (OAU) model law (Ekpere 2000), internal documents of the MET and the German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH - GIZ), and lists of related environmental laws and policy (Ruppel and Ruppel-Schlichting 2001). Interviewees were selected based on the results of the document surveys, identifying main actors specified in institutional change designs. These actors are officers at the MET, the MAWF and also the GIZ, which provides technical and financial support to Namibian ministries. Data were analysed by coding texts with the aim to extract concepts and categories. These were then sorted into the four components of the IoS framework - institutions, governance structures, transactions, and actors – in order to identify the structure of the action arenas to be analysed. Using the IoS framework, we explore the relationships between these categories in order to develop explanations for why designed institutional changes were not realized and better understand the present structure of Namibian ABS governance.

RESULTS AND DISCUSSION

Basic structure of the designed ABS administrative structure

The designed Namibian ABS institutional framework is composed of ABS contracts and the ABS legislation, which serves as the contract enforcement institution (Figure 1). An ABS contract is an agreement on the resource uses between three actors: a resource user, a resource provider in Namibia, and the Namibian government. The resource user or applicant may be granted the right to use genetic resources or related traditional knowledge under an ABS contract. The resource provider, who has been vested with the use rights for the resource, has a duty to conserve it, in-situ or ex-situ (MET 2006, Articles 17 and 21)[2]. Finally, the minister of the MET (MET 2006, Articles 1, 12.1 and 53)[3], who signs as a representative of the State, at the recommendation of an administrative body, the Interim Bio-Prospecting Committee (IBPC)[4], holds the sovereign right over the genetic resources (MET 2006, Article 3.1) as the National Focal Point under the UN-CBD, and is mandated to administer all related work associated with conservation of genetic resources. The involvement of the state contractor, vested with this right and assigned the associated duties to ensure resource conservation in Namibia and their sustainable uses under the UN-CBD (UN 1993, CBD, Article 1), is intended to balance out the asymmetrical bargaining power between the users and the providers (Gatti et al. 2011). The patterns of economic behaviours of the resource users is often regulated by commercial trading rules and a rationality developed in a Western social context; the resource providers, living in an African social context, can often have cross-cultural bounded rationality, understood as a symptom of the hegemonic position of Western-culture based agreements.

One of the core transactions required for the making an ABS contract is prior informed consent (PIC), understood here as information transactions taking place among the three potential contactors. After receiving applications from the potential users, the Namibian Competent National Authority (CNA) as the representative of the Namibian Government,

[2] Article 21.1 guarantees the right of communities to access, exchange, or share genetic re-source in sustaining their livelihood system under traditional and custom laws.

[3] Article 54.1 defines the transfer of decision making and administrative rights of the Minister to the Directorate of Environmental Affairs (DEA) of the MET. Therefore, signing on ABS contracts as well as their administrative works shall be conducted by the DEA or other administrative bodies under the MET.

[4] The administration body of Namibian ABS institutional framework is called “Genetic Resources and Associated Traditional Knowledge Unit”, which shall be established under the DEA (Articles 1 and 4).

which administrates the ABS related work of the NFP, transacts information related to their expected uses of genetic resources or traditional knowledge, which is shared with the potential Namibian resource providers. In turn, assuming there is agreement on the part of resource providers, the CNA issues a PIC to the potential user (MET 2006, Articles 7, 12.1 and 19). Based on the PIC, all three contractors then decide the terms and conditions of an ABS contract, by which physical and institutional transactions of four main components among three contractors are regulated; (i) genetic resources or related traditional knowledge, (ii) monetary and non-monetary benefits, such as royalties, research results, sales of products, and intellectual property rights, (iii) information related to the uses of accessed resources and benefits, and (iv) property rights to allocate, suspend, or withdraw any of the other three components. The designed regulation of transaction flows at the national level is clearly specified, including granting rights to Namibian ministries to control and monitor genetic resources on site, in case of agricultural or indigenous plants by the MAWF through impact assessments. Transactions occurring at harbours, airports, and in the post, as well as transactions in trades and those related to intellectual property rights are the jurisdiction of the MTI. In the event that there is found to be danger of genetic erosion and undesirable effects on the social ecological systems, understood here as transactions of information concerning the status of in-situ conserved resources through resource monitoring and information sharing, the CNA enforces a right to revoke and set restrictions on ABS contracts (MET 2006, Article 13 and 14).

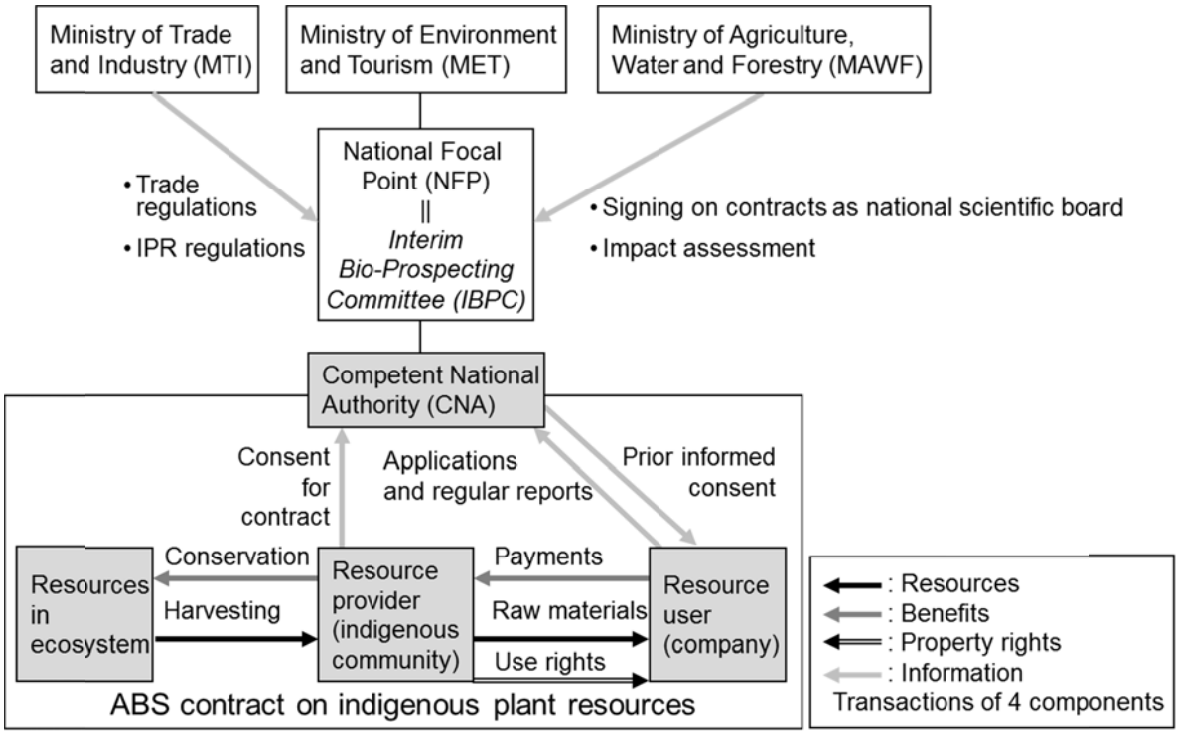

Figure 1: Governance structure of the Namibian Access-to-genetic-resources-and-Benefit-Sharing with an example on indigenous plant resources
Source: Own figure

The implementations of the governance structure on the ABS

The mechanism of implementation of ABS governance in Namibia can be understood using the IoS (Hagedorn 2008, 360) and Williamson's (2000) four level economic model. The aim of implementation is to craft a new institutional structure, composed of the ABS law and the associated bureaucracy. This can be understood as an institutional change at the governance

level of the economic institutions, based on the aim to change property rights regimes. This designed institutional performance, to use Hagedorn's terminology, is intended to alter the character of transactions related to bioprospecting activities, including trade in genetic resources and traditional knowledge, which are to be regulated mainly by market rules under a market governance structure. As a consequence, it is expected that conventional trade schemes will be improved or innovated upon in a way that reduces the transaction costs associated with sustainable resource use and benefit sharing. However, in order to achieve these changes, transactions within and between the responsible ministries, related to the administration of the ABS, must also be altered by the cabinet as government gazettes under a hierarchical bureaucracy structure.

In the case of Namibia, the governance structure for the ABS was not formed and implemented all at one time but has gradually been developing since 1994. The first governance structure of ABS was the Namibian National Biodiversity Programme (NNBP), established under the MET (Margules 2000, 1). Later, the MET and the MAWRD both took the initiative to collaborate in designing the national policies related to the ABS. Based on its mandate to administer all multilateral environmental agreements, including the CBD, several action plans and projects related to the bioprospecting and biotrade activities, as well as the draft of the ABS bill, have been developed under the MET. These are, for instance, the biotrade working group (ARD 2008, 77), the Namibia's Strategic Plan for Sustainable Development through Biodiversity Conservation (Krugmann, Cole and Du Plessis 2003, 21), and the National Biotrade and Bioprospecting Programme. In contrast to the MET, the MAWRD established a governance structure for the administration and coordination of bioprospecting and biotrade activities associated first only with Namibian indigenous fruits and later also with their plants. This was initiated by hosting a multistakeholder body of the Indigenous Plant Task Team (IPTT), as a part of the MAWRD's mandate on the promotion of national agriculture.

In the implementation processes of the ABS governance, the designed institutional change creates new action situations for the Namibian government to alter conventional institutions and adopt new institutions. This can be understood as rule-making on the allocation of resources, information, and also rights and jurisdictional mandates related to the operationalization of ABS governance within the Namibian ministries. In 2011, as part of the first implementation process, the MET held several national and regional conferences to familiarise all related administrators with the concepts of the ABS. This led to drastic alterations in the conventional process of transacting information between administrators, with new rights and mandates designated under the newly designed ABS governance structure. Changes in routine administrative work might require transactions of physical property like finance and human resources as well as of institutional property like administration rights, such as mandates. This required, in turn, transactions of large amounts of information as well as changes in norms and behaviours, which are often restricted due to a lack of information sharing, bounded rationalities, information asymmetries, and power games that exploit differences in initial resource allocation among administrators. In order to regulate transaction flows smoothly at different levels under the ABS governance structure, decentralization and cooperation among administrators in the implementation phase is critical if the administrative work is to be operationalized.

Action arena on the ABS institutional framework; institutional interplay with present state laws

Following lists of Namibian environmental laws and policy (Ruppel and Ruppel-Schlichting 2001) and based on data from interviews, we found that the Namibian ABS administrative structure is designed with reference to at least seven actors at ministry level, each of which administers different utilizations and conservations of resources, within their own scopes of mandates, with each given commensurate administration powers and resources to discharge their duties. This may lead to interactions or institutional interplays within the MET as well as between the MET and other ministries. These can be understood through reference to three institutional elements: genetic resources as the scope of the ABS legislation; objectives to transact and to use the contracted genetic resources; and monitoring of the use of these resources at the Namibian domestic level, to ensure that the other two objectives, which are specified in the UN-CBD, are achieved.

The Namibian ABS bill sets its jurisdictional scope on genetic resources wide, covering most of the genetic resources and traditional knowledge in Namibia, including wildlife, agricultural crops, and marine resources (MET 2006)[5]. These are administered by at least three ministries under the present government. The MET administers the resource protection and management only of wildlife and indigenous plants in biological diversity. Two existing laws administered by the MET, the Nature Conservation Ordinances (Act No. 4 of 1975) and the Nature Conservation Amendment Act (Act No. 5 of 1996), guarantee communal farmers' rights related to wildlife. Therefore, the interactions of the three laws can be considered to be harmonized. Meanwhile, the Ministry of Agriculture, Water and Forestry (MAWF), which administers mainly agricultural activities and forest resources uses, regulates the bioprospecting contracts on indigenous plant genetic resources, as a part of traditional agricultural cultivation and harvesting of resources by the National Botanical Research Institute (NBRI) and continues to take the initiatives there. The MAWF decided to draft two further ABS related bills in 2009: The Seed and the Seed Varieties Bill and the plant Breeders' and Farmers' Rights Bill, regulating transactions related to a newly developed plant species from Namibian landraces (Namibian Agronomic Board 2010, 33). This can be understood to partially include the scope of the ABS legislation. Here the interlinked scopes of three institutions under two ministries might be expected to cause institutional interplay; however, these two institutions were not fully designed at the time of this study and so it is not possible to say how this would play out. Parallel to these laws, the uses of forest resource is regulated by the Forest Act (Act No. 12 of 2001) of the MAWF. The third related ministry is the Ministry of Fisheries and Marine Resources (MFMR), which regulates transactions of marine and freshwater resources used in traditional ways and provides its own research programs.

Following the Namibian ABS bill (MET 2006, Article 11), the second element of aims of transacting genetic resources can be differentiated still further into commercial and research oriented uses. Here, in addition to the MAWF, two more ministries regulate these overseas transactions. The Ministry of Trade and Industry (MTI) administer overseas commercial trade objectives as well as the regulations of intellectual property rights as a form of benefits in bioprospecting activities. Related to transactions in research and development activities for bioprospecting, the Ministry of Education (MoE), administering the Research, Science and Technology Act (Act No. 23 of 2004), is in charge of the scientific research and

[5] The Namibian ABS bill does not address the direct consumption of genetic resources as food or beverages. Neither does it address the genetic resources of 64 listed crops in the ITPGR (FAO 2009: ITPGR, Annex 1), human genes, pathogens (WHO 2008: IHR, Article 2), nor resources in Antarctic (ATS 1991: ATAP, Article 3.1).

technological development for educational objectives. This might contain biological research and also the regulation of IPRs in the event that these arise as a research result. The transfer of technology related to conservation and uses of resources, understood as transactions in property rights in technologies, taken as a form of benefit sharing, is a key element of international ABS law and the Namibian state has a strong interest in this area for the development of domestic industries.

The third institutional element specified in the Namibian ABS bill is monitoring of the uses of genetic resources at the local level. By issuing a PIC and facilitating ABS contracting, the Environmental Management Act (Act No. 7 of 2007) of the MET can provide information complementary to existing local and indigenous knowledge, in terms for example, of environmental impact assessment of expected uses on wildlife and landraces. Resource monitoring is administered by the MET and also two more ministries; the Ministry of Security and Defence (MoSD), which administers research and technological development related to land security, including resource monitoring, such as monitoring of bushfires; and the Ministry of Land (MoL), which provides administrative support for land management and makes land available for the creation of new land uses such as plantations or community forests for the expansion of raw material production. The MoL administers the Communal Land Reforms Act (Act No. 5 of 2002) which takes into account and regards customary land allocation regulations and roles of TAs on resource management.

Within the language of the IoS, the above information can be understood to specify an action arena on ABS law administration in Namibia. Institutions of the designed ABS legislation and present Namibian state laws are governed under the bureaucracy of the Namibian state. These two types of institutions provide and regulate administration scopes and mandates, understood as institutional transaction of property rights, among actors of different ministries. Due to the differences in transactions between the two types of institutions, the implementation might cause institutional interplays. In order to avoid them, adjustment of governmental structure may be required, while cooperation among different ministries may be a more realistic expectation, aiming to harmonize ABS laws and present ABS related governance structures in the state.

Action arena on the implementation of ABS governance

Establishment of the multi-stakeholder body IBPC can be understood to indicate that the operation of the ABS legislation, including the regulations of transactions at the local level, such as the monitoring of resource uses and land management, could not be performed by only one ministry, due both to a lack of capacity and to requirements for drastic reforms of the present government institutions and governance structure in Namibia. Such change will involve high transaction costs associated with the time, finances, and resources requires for coordination, negotiations to reach agreement, and implementation. Instead of having to make such an investment, IBPC encourages cooperation among ministries, to compensate for the limitations of their respective administrative scopes and to complement their respective administration functions. This decision of the cabinet can be understood as a reflection of expected lower costs associated with a systematic integration of administrative authority across ministries into an ABS governance structure. However, action choices of ministries are legally defined and regulated under a bureaucracy and their cooperation, which requires the alteration of present transaction flows of human and finance resources as well as information transactions through official communication channels between them, cannot be conducted in the same way as with actors in a market governance structure.

The achievement of smooth implementation with cooperation among ministries can be understood as an action arena on the allocation of information, human resource, property rights and mandates related to administration, and finances between ministries, each with bounded rationality. In this arena the MET enjoys asymmetric power as compared with the other ministries, associated with its and their legally defined action choices under the bureaucracy. the present study founds two demotivational factors at play here; (i) the strong distinction of administrative scope regulated by legally binding force and (ii) a lack of recognition on the importance of the ABS among ministries and stakeholders.

Of particular relevance is the strong distinction of administrative scope, which make ministries more interested in attending to their specified administrative duties, reducing motivation to co-administer or cooperate with other ministries, which would require that officials communicate and share financial and human resources, as well as mandates. With implementation of its mandates each ministry incurs costs associated with altering governance structures and institutions and losses of existing investments in administrative work, and, in the event of cooperation, the reduction of their authority. They might understand it not simply as a loss for themselves but also of social welfare, if the effectiveness of governance is reduced. For these reasons the distribution of information through ABS workshops, including the planned distribution of administrative work and the implementation time schedule, was first aimed at gaining administrators acknowledgement of the need for a new regime. It was also expected to reduce the uncertainties of the ministries hesitating to actualise the ABS legislation, reflected in the fact that the ABS legislation had already been postponed once, from 2007 until 2011. Then it might provide information for the calculation on how its implementation would bring more benefits than cost. This information transaction before decision making, may be significant for effectively securing the cooperation and increased awareness of ministries, which can lead to the smooth rule-making and enforcement of ABS legislation.

The allocation of administrative workers for the operationalisation of the ABS governance, understood here as alteration of their working positions, cannot be decided by the officers themselves, as it might be under labour market governance, but is decided instead as a hierarchical decision as a part of reform of a governance structure. Following Ostrom and Crawford (2005), this allocation need not be determined by the boundary rules of the MET; rather it is regulated by the aggregation rules, vesting joint control in the upper level of the Namibian cabinet. Within the language of the IoS, this action situation can be understood to be located not only within a ministry but as part of network of action situations across the Namibian government, composed of various governmental bodies. This can be observed in personal reshuffles in biotrade governing bodies, such as IBPC, IPTT and the MET, with individuals shifted to other sections, due to a lack of capacity. This leads adversely to absence of human resources in the administration of the ABS implementation, with the reshuffling of one individual indicating that it is a challenge for the Namibian government to find a suitable successor for this person, replacing his knowledge and experiences. In the case of the present administration of bioprospecting contracts on indigenous plants, only a single NBRI officer signs contracts on the behalf of Namibia, acting as a scientific board. Similarly, transferring information between outgoing and newly assigned officials in the succession of work is required to ensure the smooth implementation of the ABS governance. Here it appears that the hierarchical ABS governance structures in Namibia must be then be designed in a way that the rules of Namibian bureaucracy regulate these important information and labour allocation transactions as mandates of administrative works. This will be important for

establishing relations among different administration bodies, for instance, the IPTT and the IBPC.

The financial resources for budgeted activities related to the IBPC, including information distribution, coordination for agreements, are distributed across the involved ministries by its host ministry, the MET. In some financial matters, the MET, however, transacts administrative tasks without any financial support.

The final transacted component to be focused upon in this analysis is the administration rights of the IBPC to decide allocations of mandates and resources to the three implementation components, which have all been reallocated by decisions of the cabinet but which do not seem to be sufficiently well anchored to ensure a smooth implementation of the ABS governance. With an example of bioprospecting activities on indigenous plant resources, the ABS law implementation aims to transfer administrative rights from the IPTT of the MAWF, vested at present with authority, to the IBPC of the MET. This institutional transaction might lead to a need to also transact human resources, reflecting a move of the administrative worker currently in charge of this task. This transaction cannot be crafted by the IBPC alone and it faces allocation problems, in particular, regarding its decision rights on te specification of resource distribution. Parallel to the human resources issue, the IBPC and the MET are vested rights to distribute information related to the implementation of ABS governance to other ministries; however, its knowhow and opportunities are restricted, also related to a lack of the capacity of the MET, which leads to a reluctance of other ministries to assist with regulations of extra-jurisdictional scope.

Reflecting a lack of human resources and support structures in the present ABS regulation activities, it is important to allocate mandates for ministries in a cooperative way, with designed information transactions taking place both before and after adoption. These allow the MET to create incentive for other ministries to collaborate in the enforcement of the ABS institutional framework.

Relations between the Namibian ministries involved in ABS law, in terms of above four transacted components, can be understood as a problem of the distribution of administrative mandates and the playing of power games for setting the jurisdictional scope of each ministry, combined with the presence of administrative initiatives to collaborate in ABS governance. Following Libecap (1989, 216), each actor can be understood to calculate their individual expected net gains and transaction costs associated with bargaining in the process of negotiating to alter the property rights regime of the mandates and resources. The distribution of resources, or properties for administration, such as human capacity, finances, information, and know-how about the ABS governance all strongly depend on the initial allocation of administrative rights. The decision rights in the ex-ante status of its implementation defines the scope of the transaction costs, associated with restructuring the governance structure, and determines who will cover this costs. Due to the characteristics of the bureaucracy, action choices of ministries are strictly limited by the mandates given by the Namibian cabinet, which do not support allocation of resources for negotiating ABS law implementations; all the contrary, this can be an obstacle to the cooperation.

Reflecting this, the administrative actors of the IBPC can consider jurisdictional scope a priority, as a way to create incentives to craft smooth transactions of information, leading to increased collaboration among ministries. Some of actors see this in an example of the Community Based Natural Resource Management, hosted by the MET, for the in-situ

conservation of non-plant resources in the studied regions. Its small-scaled interdisciplinary administrative structure makes it possible to support collaboration between ministries and the harmonization of policies across ministries. In order to concretise and enforce its implementation plans the cabinet can transact ministry mandates to set up official communication media, on one hand, within the MET for consultation meetings. These communications craft vertical fluent transactions of information by collecting comments, including expressions of interests in the revisions of operations. On the other hand, ministries can build a communication pipeline as a basis for further collaboration work under the IBPC as a multi-stakeholder body. At that point the present administrative structure of the ABS must be revised by shifting the present jurisdictional scope of ministries to take the ABS-oriented meta-structure into account. Indeed, the IBPC, which is administered de-facto by only a single ministry, the MET, could be administered by several ministries as a collaborative effort. If it is not shared in this way, so to speak, its consolidation will require drastic reformation of multiple ministerial structures in order to alter the jurisdictional scope of several ministries, which would certainly result in much higher transaction costs. As the administration of ABS contracts requires comprehensive governance, this paradigm shift in governance structure would seem to be a key reform.

CONCLUSION

The current stagnated situation with regard to the implementation of ABS law in Namibia can be explained through reference to power asymmetries, in terms of jurisdiction, control of financial resources, information, and enforcement rights. Under a hierarchical bureaucratic governance structure, the action choices of the ministries are regulated by state law, which allocates jurisdictional decision rights. Ministries and parliament consider the choices of which state laws, including ABS legislation, to adopt or amend, taking into account jurisdictions. In the language of the IoS framework, this action situation is created through the process of forming institutional performance. This, in turn, is designed by ABS legislation under a combined governance structure of hybrid markets and bureaucratic authority. Under the bureaucracy governance structure, changes directly regulate resource allocation, in this case of finance, human resources and information, among actors, in this case ministries, at the fourth level of Williamson's model of economic institutions. The ABS law implementation process, which aims to reform the Namibian property rights regime for genetic resources, comes across power asymmetries not only in the market but also across its own ministries, which can be analysed at the institutional environment level, and to some extent related to changes in norms and beliefs at the social embeddedness level, which are bases of conventional trade scheme and their administration structures. This study has explored the difficulties encountered in the implementation of an ABS governance structure in Namibia, which can be understood as simultaneous institutional change at all four levels. It highlights that power asymmetries between actors, in terms of jurisdiction, control of financial resources, information, and enforcement rights, associated with different rationalities, appear to play an important role in constraining implementation. These insights, which suggest that co-administration of a meta-agency would be the lowest cost option, suggest that the mechanisms of the implementation problem encountered in Namibia can be logically explained and so hopefully also resolved, as the county works to form new governance on the ABS, leading to sustainable uses and conservations of biological resources and related traditional knowledge.

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