

Of pastures and tourism

A comparison of Tyrolean and Namibian commons institutions¹

Introduction

Our study compares pastoral commons in Tyrol (Austria) and in Namibia. In both areas, forest commons and individually owned or used fields often complement pastoral commons in an agro-sylvo-pastoral farming system. Our research focuses on the pastoral component. Tyrol represents the living commons in the European Alps (Austria, Slovenia², Italy and Switzerland) and the historical single village commons in the northern Low Countries and lowland Germany. These European commons share a number of distinctive key attributes: individual and enumerated grazing rights for the owners of ancestral farms, communal herding, pastoral shares proportional to farm size (*pro rata parte*) defined in animal units and relative low, fixed numbers of commoners.³ The Namibian commons may be considered exemplary for institutions in Botswana⁴ and South Africa⁵. Commons are defined by three components: a relatively large parcel, a collective of commoners holding rights to the parcel and tenure rules regulating relationships between parcel and commoners. Consequently, 'commons' is used in the literature for the parcel as well as the cooperative institution managing the parcel.⁶

The selected variables of commons are an extension of Elinor Ostrom's universal design principles developed for the wide variety of common pool resources ranging from fisheries to forests. Our variables, however, are more narrowly defined as found relevant for historical and living pastoral commons developing towards a mixed economy, and in particular combining pastoralism and tourism.

The article is structured as follows. An overview of the history, geography, governance and land tenures of the Namibian commons are provided first. Methods for the analysis are then justified. Results are presented and discussed under the following themes: one owner, public or collective ownership, the local presence, small membership, small shareholdings, decentralised governance, internal democratic elections, minimal internal boundary recording, minimal explicit sanctions, enablement of mixed economy and the triumph of geography. A conclusion section synthesises key findings and their implications on future research activities, and the governance of tourism and pastoral commons in general.

Namibian commons: a primer

North-central to north-east Namibia is tropical sub-humid, flat and endowed with seasonal (Cuvelai) or permanent rivers (Kunene, Kwando, Kavango, Chobe and Zambezi). Conse-

quently, pre-colonial contiguous agro-pastoral commons prevail at the northern fringe of Namibia (Fig. 1). This type of land tenure is frequent in Namibia, accounting for 40 per cent of the land area. Freeholds ('commercial lands' accounting for 45 per cent of the land area) and protected areas (Fig. 3) constitute the other major tenure types.

Figure 1: Traditional Authorities (TAs), external boundary disputes and the Red Line in Namibia



Source: Hipondoka/Haudiu, Mapping areas, see note 28 (individual TAs and boundaries); Mendelsohn et al., Atlas of Namibia, see note 21 (Red Line).

[See print version for illustration]

Historically, Imperial Germans (late nineteenth century) and subsequently Afrikaans-speaking colonists from the Union of South Africa settling central and southern Namibia avoided the northern commons due to stock (CBPP, tsetse, AHS) and human (malaria) diseases combined with a dense population. The successive colonial administrations consigned the northern commons to customary local rule by, from west to east, Oshiwambo- (Fig. 1: no. 7–14), Rukavango- (15–19) and Silozi-speaking (20–23) agro-pastoral societies. As such, these commons have survived regime changes from feudal kingdoms and chieftainships over German *Südwestafrika* to indirect rule by the Union/Cape, direct rule by Apartheid South Africa and through to independent nation state.

Local rule in the commons was complemented by statutory prohibition of freeholds north of the Red Line⁷ during German as well as South African administrations and perpetuated post-Independence. In effect, the Red Line has acted as cadastral divide.⁸ Beyond its veterinarian and cadastral implication, the Red Line curtailed mobility of people, livestock and goods during colonial rule. Curtailement of livestock mobility extends into contemporary times.

Namibia south and west of the northern agro-pastoral commons is more arid, prone to night frosts in winter, mountainous, without permanent rivers and therefore pre-borehole pastoralism depended on networks of springs and shallow wells. Consequently, north-west, central and south Namibia were during the nineteenth century essentially pastoral with associated lower densities of semi-nomadic herders or mounted cattle rustlers (Herero, Damara, Nama) and hunters for ivory, ostrich feathers and hides from the Cape.⁹ These semi-arid pastoral territories were largely appropriated for freehold ranches including their huntable game by subsequent colonial rulers. The foreign administrators sustained a parcel cadastre of freeholds (about 100 km² each) from the late nineteenth century onwards. Remnant commons (aka native reserves until the 1960s) within the semi-arid pastoral lands south of the Red Line were forcefully populated by a mix of tribal groups in the 1920s and enlarged in the 1960s through addition of adjacent, government-purchased freeholds following the Odendaal Plan of 1963.¹⁰ Consequently, the western (Fig. 1: no. 1–5), eastern (24–30) and southern (33–34) commons lack the historical continuity of place and ethnicity of the north.

After implementation of the Odendaal Plan in the 1960s, commons were administered as homelands under the direct rule of the Republic of South Africa and locally by a council of elders or a chief executive known under various names including king, chief, *litunga*, *homba* or *kaptein*. Allocation of residential, arable and pastoral use rights followed unwritten, customary rules. In addition, homelands possessed broader local government powers including armed police forces.

After independence, the rural commons were regulated by statutory law¹¹ and collectively called communal lands (Fig. 1: Traditional Authorities, Fig. 3: Commons). In contemporary times, the term ‘Traditional Authority’ (TA) refers, as ‘commons’ does, to the institution as well as the parcel. The custodians of TA institutions are known under local names. Other TAs are governed by a council of principle/senior headmen each representing a portion of the commons. The land allocation procedures of the TAs, the Communal Land Boards (CLBs) and the Ministry of Lands and Resettlement (MLR) as defined by the Communal Land Reform Act¹² differ from practice in at least three regions. Human and IT resources and complexity of the processes are found to be the core challenges.¹³

The Namibian Nature Conservancy holds conditional use rights for huntable and protected game¹⁴ in a defined portion of the pastoral commons (commonage) within the TAs. Conservancies need a constitution, a list of self-selected members registered with their ID and/or birth certificate and an external boundary (see above) all three subject to approval by the Ministry of Environment and Tourism (MET). The Conservancies on TA land are depicted in Figure 2 (TA Conservancies). Conservancies on freeholds are mapped in the same figure for comparison, but will not be treated any further in this study.

Figure 2: Nature Conservancies in Namibia within Traditional Authorities and on freeholds



Source: NACSO 2014.

[See print version for illustration]

It is also worth noting that Namibia is subdivided in 14 political regions administered by elected Regional Councils. These bodies are responsible for defined activities in rural areas, currently education and public investment, but not regional land use zoning. The latter is currently carried out by the MLR based on an executive decision by the Cabinet. 50 Traditional Authorities (TAs) are de facto the local government directly answering to national government (Ministry of Regional and Local Government, Housing and Rural development (MRLGHRD) and MLR through the CLBs). In protected areas the national government (Regional Services & Parks, MET) doubles as local government, while in the freehold area either the Regional Councils and/or sector ministries are de jure the local governments.

Figure 3: Tenure in Namibia



Source: Mendelsohn et al., Atlas of Namibia, see note 21.

[See print version for illustration]

Methods

A comparative study using primary and secondary source data informed the analysis. Recent findings on Tyrolean pastoral and tourism commons¹⁵ act as starting point for the comparison with Namibian commons. Based on a previous article,¹⁶ eleven design principles, an addendum of Ostrom's design principles,¹⁷ found relevant for living pastoral commons provided the analytical framework for our comparative research. These design principles argue for: (1) one owner, (2) public or collective ownership, (3) a local presence, (4) small membership, (5) large shareholdings, (6) decentralised governance, (7) internal democratic elections, (8) minimal internal boundary recording, (9) minimal explicit sanctions, (10) enablement of mixed economy and (11) triumph of geography.

Our European study area was the State of Tyrol in the Austrian Federal Republic, in particular its south western periphery with contiguous, historically continuous pastoral commons. Prior to the proclamation of the Austrian Republic after the First World War, several

pastoral commons extended across today's international borders. The Tyrolean pastoral commons exemplify the contemporary institutional template found throughout the Alps and the historical single village commons in north west Europe.¹⁸ Tyrolean data was secondary in nature and is directly equivalent to that published in an earlier article.¹⁹

Our African area of interest was Namibia, with emphasis on its northern fringe where commons are contiguous and historically continuous. In pre-colonial days, most of the pastoral commons extended across today's international borders with Angola, Zambia, Botswana or the Republic of South Africa (RSA). Consequently, we referred to neighbouring countries where appropriate. Namibian data was acquired through interviews undertaken across 2013/14, public governmental sources and grey and academic literature. More specifically, empirical information on the selected variables was extracted from scientific literature. Gaps were filled by interviewing experts in Namibia (Table 1) including two co-authors of this paper each with substantial working experience in commons.

Table 1: Interviewed experts on Namibian commons

Organisation	Function	Region	Date
BMCC project MET, Kavango	Expert	Kavango	Mar/Apr 2014
Regional Services & Parks MET	Warden	Central North	Apr/May/June 2014
Geography/History UNAM	Lecturer	Kunene, Erongo	Apr 2014
BMCC project MET, Windhoek	Expert	Northern commons	Nov 2013, Feb 2014

Two vector GIS data layers, registered Conservancies²⁰ and TAs²¹, were intersected in ArcGIS 10.1 to obtain the conservancy area extent per TA (km²). Subsequently, the TAs were aggregated per main home language and associated land use in three categories: hunting-gathering, pastoralism and agro-pastoralism (see Table 2).

Regarding terminology, we have used contemporary geographic names, although most have changed at least once during the past two centuries. For example, around 1900, as Namibia was called German South West Africa (*Deutsch-Südwestafrika*), north central Namibia was collectively known as Amboland or Ovambo, north west Namibia as Koakoaland, west central Namibia as Damaraland, central Namibia as Hereroland and the southern Regions as Namaland.

In the following, results are presented and discussed using the eleven design principles for structure. Maps and tables are used to inform the arguments made. Hypotheses for the impacts of the results are also provided in each sub-section.

Results and discussion

One commons, one owner

An important enabling factor for the Tyrolean commons was the existence of a clearly identifiable and authoritative party acting as 'owner' of the commons parcel. Meanwhile, in Namibia, multiple interests were found to be vested in the areas studied. Use rights in the

commons are allocated by the 50 local TAs, while all other land rights, including lease of larger parcels to non-residents, are vested in the nation. That is, beyond residential and subsistence farming rights, all land and game rights in the TAs are vested in the state. Moreover, the custodian of the land rights is the MLR through the regional CLBs and of the game rights is the MET. These rights constitute substantial powers in relation to the land and undermine the 'one commons, one owner' principle.

The current position of the TAs would seem unsustainable in the mid-term. The use rights for major assets in pastoral TAs, including hunting rights and tourist services, are locally managed by Conservancies with democratic legitimacy. In effect, the TAs relinquish their main authority, allocation of residency and associated subsistence land use rights, in the Conservancy area. Especially, in pastoral TAs this implies losing authority over major areas, or even most of the TA areas. Unlike for land lease in TAs, the transfer of hunting rights to Conservancies seems permanent and not controlled by the CLB. The further implications of these arrangements are revealed in the subsequent design principle analysis.

Public or collective ownership: either works

Another design principle argues that successful commons institutions can vest ownership of the commons parcel(s) in either public or collective institutions. This was certainly the case in the Tyrolean commons. Meanwhile, in Namibia the TAs are clearly collective institutions, however, the Conservancies also need to be considered here. The Namibian Conservancies are broadly comparable to the lessees of hunting rights (natural person or hunting association, Jagdgesellschaft) within the Tyrolean commons. Meanwhile, all other interests are vested in the state. Therefore, depending on what resource right is being considered, both public and collective ownership can be argued for a specific commons in Namibia.

This duality is best explained by historical developments with regard to different resource rights. For example, after independence a legal framework²² similar to neighbouring countries with comparable colonial histories (Botswana, South Africa, and Zimbabwe) was enacted for the devolution of use rights of huntable game to public law associations of TA residents called Communal Nature Conservancies.

Interestingly, in Namibia we found a perception that Conservancies hold exclusive, transferable rights to build lodges and organise safari tours within its hunting domain. However, neither the Nature Conservation Amendment Act²³ nor any other law appears to provide a legal grounding for exclusive lodge building or tourist activities. This inconsistency between law and on-ground activities was more prevalent in the Namibian cases.

It is difficult to conclude whether 'either works' from the Namibian case, however, certainly both public and collective ownership are occurring simultaneously.

Public ownership demands local presence

In Namibia, unlike Tyrol, the TAs ownership arrangements were found not to adhere to the design requirement that when the public holds an interest in the land, it also maintains a local presence or representation. TAs are approved, administered and funded for their managers

at national level by the Ministry of Regional and Local Government, Housing and Rural Development (MRLHRD).

Beyond MRLHRD (TAs) and MET (Conservancies), at least two national organs of state affected TAs and Conservancies. Exploration licenses for mining have been granted by the Ministry of Mines and Energy (MME) on TAs and Conservancies without consultation. Moreover, TAs or Conservancies are not legally entitled to compensation of damage by mining activities unlike freehold owners. Reportedly, an exploration crew put up a camp in the core area for the protection of Rhino in Kunene and could not be convinced by the Conservancy to move camp. Similarly, licensing of borehole drilling by the Ministry of Agriculture, Water Affairs and Forestry on communal land is not subject to approval by TA or Conservancy. A trophy-hunting operator reported that livestock at a new borehole in his license area in a Conservancy interfered negatively with hunting by his clients.

The MLR/CLB are in control of all remaining land rights (*Substanz* in Tyrol). Regional Services and Parks (MET) has the widest, most numerous and well-equipped local presence. Other organs of state have only regional offices. The only 'local government' in the rural commons are the TAs (under MRLGHRD).

Small membership is beautiful

Tyrolean commons profited from having small membership bases (e. g. between 10 and 100 parties). In Namibia, this design principle could not be assessed directly: Membership in Namibian TAs appears not to be registered, neither nationally nor locally. Unlike Austria and many other continental European countries (Germany, Italy and Netherlands) with a compulsory registration of all residents at local government level, Namibia does not keep a local residency register. Similarly, the USA, the UK and many commonwealth countries do without a local registry of residents. A sizeable section of Namibian citizenry retains two residencies, in town for employment and in a TA as part-time farmer. The absence of a residence registry combined with dual residency makes for uncertainty of TA membership. Indirectly, a minimum membership can be estimated by the listed membership of the Conservancy within many TAs. Several Conservancies in pastoral TAs in the West (Kunene) and East (Otjozondjupa) have 60 to 100 listed members. However, membership numbers in Conservancies in the agro-pastoral TAs in central north and the north east range from 2,000 upwards to 25,000.²⁴ Although Conservancies statutorily include a membership list, in the absence of a mandatory proof of residency or proof of life, membership numbers remain uncertain.

Meanwhile, in Tyrol, the number of livestock per commoner is stipulated in the statute and derived from the amount of land providing winter feed in the stable (hay); in Namibia the livestock number per member is unrestricted up to 200 cattle and the number of commoners is uncapped.

Small shareholdings are not beautiful

Members of Tyrolean commons tended to enjoy large shareholdings in the pastoral commons. In Namibia, only a preliminary assessment of the design principle arguing against

small shareholdings can be made. Overall, there is evidence for both small and large holdings in Namibia. TAs allocate lifelong, non-transferable, non-hereditary residential parcels of up to 20 ha. These include cattle posts and, where applicable, homestead gardens. Commoners may use uninhabited portions of commons as pasture (commonage). Depending on the extent of the commonage and the ownership and distribution of watering points, the size of the effective share in the pastoral commons may vary considerably. Additionally, if unoccupied for five years, the TA may reallocate the residential parcel. Depending on the number of household members working the fields and on the number of livestock held by the household, the residential parcel may be as small as two ha. Leaseholds of more than 20 ha (for individual pasture or irrigated farm) require consent of the TA, endorsement by the regional CLB and approval of MLR. It is unclear whether the smaller shareholdings have an undermining effect on the overall management of the commons.

Decentralised governance helps

Control over the commons and the rights pertaining to it were highly decentralised in the Tyrolean case. The relevance of local control for communal tourism ventures is also established in Namibia.²⁵ Evidence for the design principle espousing this decentralised governance was also obtained in Namibia: Homestead rights are allocated at the lowest hierarchical level of the TAs, the village (ward) headman. However, more centralised approaches were also evident for other rights: Applications for 25 or 99 year leaseholds are decided upon at the highest TA-level (chief or council) and require approval of the CLB, and if the parcel is larger than 20 ha also that of the MLR. It is important, however, that TAs do not allocate water use rights, the limiting resource for both residency and pastoralism in the commons.

Overall, decentralised governance is evident through the existence of the TAs: The decentralised approach is likely to take on a more formal governance structure with the likely adoption of modern local government in the medium term comparable to the neighbouring countries, Botswana and RSA.

Internal democratic elections help

In the Tyrolean commons, a strength of the institutions has been found to be the regular democratic election used for organising leadership. In Namibia, this design element is also evident, though to a lesser extent.

Leadership of TA institutions may be variously held by a hereditary chief, *kaptein*, king, *homba* or *litunga*. Other TAs are governed by a council of principle/senior headmen each representing a portion of the commons. These seats are not allocated democratically.

Meanwhile, Conservancies need a constitution, a list of self-selected members registered with their ID and/or birth certificate and an external boundary (see above) for approval by MET. In other words, Conservancies are public law associations. The TA often has an ex-officio seat in the management committee of the Conservancy, but not in the executive committee and holds de facto a veto right on land issues. The chair, the vice chair, treasurer and the secretary of the Conservancy executive committee are elected at the Annual General

Meeting by secret ballot. Conservancies cannot register at the CLBs as the law²⁶ does only provide for natural persons to register and exclude legal persons to do so.

Boundary records: internal superfluous, external essential

The Tyrolean case revealed that boundary records for differing land uses within the commons were superfluous for both the commons institution and higher levels of government. The Namibian case potentially challenges this design principle. However, before discussing whether internal boundaries were identified and mapped in the case, it is worth exploring Ostrom's original design principles²⁷ relating to the importance of clearly defining external boundaries.

The external boundaries between TAs were only recently mapped and found to be disputed in many places, especially in commonages away from densely populated cropping areas.²⁸ Disputed inter-TA boundaries had not been adjudicated at the time of our research. Some of the boundary disputes, for example the eastern boundaries of Uukolonkadhi versus Otjikaoko/Vita TAs (Fig. 1: no. 7 vs. 6), originated in the homelands boundaries created by the Odendaal Plan ignoring TAs. The Mbukushi/Mashi/Mafwe case (Fig. 2: no. 19–22) had surfaced post-Independence after decommissioning the South African military base covering the western half of the Zambezi Region (aka Caprivi).

External TA boundaries with National Parks or freehold farms have been surveyed during colonial administration. External boundaries of Conservancies are available online at coarse, national scale (Fig. 2). In addition, GPS coordinates in unspecified projection systems and of unknown accuracy are provided online for Conservancy boundaries.²⁹ These Conservancies are often established in a portion of the TAs not extensively grazed by cattle and other stock. Spatially, TAs and Conservancies represented nested commons, but not administratively as the TAs and Conservancies have no statutory relationships.

The failure to survey and register most of the external boundaries of Namibian TAs for over a century in the Deeds Registry, administer only a fraction of the applications for individual residential parcels for within TAs since Independence in the CLB registry, and not record Conservancy boundaries at all in a formal registry, cannot be attributed to technical and financial limitations as postulated by Toulmin.³⁰ Currently, professional (assistant-) surveyors are plenty and Namibia is a middle-income country. Historically, the external TA boundaries represent only a fraction of the freehold boundaries. However, in Tyrol external commons' boundaries were surveyed, adjudicated and registered about a century ago in parallel with farms within a few years in an era without access roads, cars and GPS.

Meanwhile, regarding internal boundaries of TAs, surveying and registering parcels of less than 20 ha allocated to individual households for combined use as residency, field and pasture has been initiated recently. However, the survey and registration requirements of use rights in the TAs differ from those of freeholds. Use rights cannot be registered in the Deeds Registry of freeholds but only at the CLB; individual use right parcels are surveyed with lower spatial accuracy (aerial photography or hand-held GPS) than freeholds. Such individual parcels and approved larger leaseholds may be fenced. Otherwise, fencing or enclosure of large tracks (up to 10,000 ha) of TA-commonages by individuals, although frequently done by owners of boreholes and large herds, is illegal since 2002.³¹ However, enclosed pastures in

TA commonages approved by the TA before 2002 are legal.³² Further, within a Conservancy, TA-approved fencing of a core wildlife area was reported. Fenced-in residents were allocated other residential parcels in compensation.³³

Interestingly, the Namibian case has revealed surveyed and registered boundaries for wildlife commons (Conservancies) and some residential parcels within TAs. However, external TA boundaries are neither surveyed nor registered, except by implication when coinciding with conservancy boundaries. However, registered boundaries for TAs are crucial when an organ of state (e. g. MLR for Small Scale Commercial Farms) or a mine acquire a piece of land in the commons and compensation for use rights is due. This tends to go against the specific design criterion being assessed. The root cause here relates to the earlier design criteria: the lack of one clear and authoritative owner over the majority of the land resource rights. The need for internal boundaries in Namibia therefore flows from the institutional weakness of the TAs and their requirement to defend the use rights of their members (or compensation in case of loss) against a strong national government. The result also illustrates the need to place the design criteria for both internal and external boundaries in a broader context: Boundaries records are not only about protecting against neighbours, natural persons or legal persons – they are useful in preventing the state or companies appropriating land without compensation to individual or collective holders of use rights.

Explicit sanctions are superfluous

In the Tyrolean case, explicit sanctions by the commons against members of the commons institutions were found to be superfluous: The individual desire to adhere to the norms of the commons provided enough incentive.

Likewise, in the Namibian case, whilst evidence of sanctions being acted upon was found, most of these were the domain of national government. For example, illegal fences are identified and prosecuted in the commonages of TAs frequently by the CLB. The fenced pastures range reportedly from 36 to 5,732 ha.³⁴ Obviously, the TAs are either unable or unwilling to prevent fencing of portions of their commonages.

Meanwhile, TAs have no statutory control over Conservancies on their land. However, de facto Conservancies often seek approval of TAs. The annual huntable game quota available to the Conservancy are set and monitored by MET. However, compliance is hard to monitor and sanctions by MET or Conservancies have not been reported.³⁵

Mixed economies can grow organically

The Tyrolean case has revealed how a mixed-use economy could grow organically around and on the commons parcels. Commoners accumulated individually owned real estate, fields and farms within their villages, in turn allowing for accumulation of livestock through the access to the village commons associated with the real estate. Meanwhile, the Namibian situation appears more stunted. In pastoral economies without individual land ownership, livestock is the currency of capital accumulation for individual commoners: Herding in Europe is undertaken collectively, in Namibia it is an individual activity. In this regard, live-

stock as a primary currency limits development opportunities. It is important to note that, historically, colonial governments purposely prevented development of a mixed economy in the reserves and succeeding homelands. The postcolonial government orchestrates the mixed tourist economy and land lease allowing TAs to generate cash income; however, the vet fence (Red Line) restricting export of livestock products from most of the commons and land tenure uncertainties hamper a mixed farming economy thus perpetuating the colonial peasant economy.

Meanwhile, Conservancies may accumulate productive capital assets in two major ways: tourist infrastructure (lodges, campsites, access roads and boreholes) and game. In Namibia (and RSA), surplus huntable game (e.g. kudu, zebra) and protected game (e.g. elephants, giraffe) is captured alive by specialised companies for auctioning to approved bidders including Conservancies. Purchased wildlife is used by Conservancies to restock. NGOs and OECD countries often provide the capital.³⁶ Annual huntable game quotas are established based on game monitoring by Conservancies. After approval by the MET, quotas are leased to commercial operators for recreational hunting or live capture and to professional hunters for meat to share among Conservancy members.

Tourist lodges in Conservancies are often Joint Ventures between the Conservancy and an external investor.³⁷ The Conservancy leases land to the lodge owner for 10 to 30 years, manages the game and provides local labour. However, the legal base for land lease by Conservancies appears questionable, as communal land lease is the prerogative of the TA and CLB. In addition, the lodge owner sometimes pays a share of the profits, bed levy and transfers the lodge building to the Conservancy at the end of the lease (Tsiseb Conservancy, Brandberg White Lady Lodge). In other cases (≠Khoadi-//Hôas Conservancy, Grootberg Lodge), foreign donor capital was provided to the Conservancy to build a lodge subsequently leased to a hospitality company.

Conservancies depend for their hunting operations on non-member licensed commercial operators. The tourist lodges within Conservancies are contingent on capital investors and hospitality services provided by outsiders. Finally, visiting recreational hunters and other tourists generally book their tours through international operators. This dependency on external parties does not bode well for the economic sustainability of Conservancies.³⁸

The triumph of geography

Geography was argued as a key reason for the persistence of the pastoral commons in Tyrol. Likewise, the peripheral location of (agro-)pastoral commons in the Namibia appears to be a supporting factor. The locations of the commons institutions of Slovenia,³⁹ RSA,⁴⁰ Tanzania⁴¹ and Ethiopia⁴² provide further evidence: Each conforms to Johann Heinrich von Thünen's spatial model of land use. The model predicts extensive livestock grazing and 'wilderness' in the outer ring around the urban centre. The living pastoral commons in northern Namibia and western Tyrol are both contiguous and peripheral in their respective nation states. The commons are mostly distributed along national borders (Angola, Botswana, Coast respectively Italy) and far from capital cities (Windhoek respectively Innsbruck) and commercial and industrial heartlands (the Walvis Bay-Swakopmund-Windhoek corridor respectively the lower Inn valley).

Conservancies occupy less than a third of the surface area in agro-pastoral TAs, but more than a third in pastoral TAs. The Otjiherero TAs and the only hunting-gathering TA practically coincide with their Conservancies (Table 2). Evidently, Conservancies are more compatible with pure pastoralism and hunting-gathering as compared to mixed agro-pastoral farming. This may be partly explained by the frequently reported crop damages, particularly by elephants as well as livestock and human casualties by the large feline carnivores in the more densely populated agro-pastoral TAs. Damage by herbivores or carnivores may not only affect Conservancy members, but also non-members. Following the Human Wildlife Policy 2009, MET pays damage claims and expects Conservancies to match the funds.

Table 2: Extent (square kilometres) and proportions (per cent) of Conservancies in TAs grouped by main language

Serial number*	Traditional Authorities (TAs)		Conservancies (C)		
	Language	Land use	1,000 km ²	%	C/TA %
24–25	Sa gowAb (San)	Hunting-Gathering	18	12	93
26–28	Otjiherero	Pastoralism	41	26	91
06	Otjihimba	Pastoralism	37	24	76
01–05	Damara	Pastoralism	34	22	69
33–34	Nama	Pastoralism	09	05	36
20–23	Silози/Sifwe/Siyeyi	Agro-Pastoralism	04	02	30
07–14	Oshiwambo	Agro-Pastoralism	13	08	23
15–19	Rukavango	Agro-Pastoralism	01	01	02
Total			157	100	

* numbers in Figure 1

Source: Extent of Conservancies measured from NACSO (2014); language and land use from own observations.

Conclusion

Our study has compared pastoral commons in Tyrol and in Namibia. In both areas, forest commons and individually owned or used fields often complement pastoral commons in an agro-sylvo-pastoral farming system. Our research has focused on the pastoral component and made use of the design principles outlined elsewhere as an analytical framework.⁴³

As expected, Tyrolean commons adhere to all the design principles. Indeed, they form the empirical evidence for the framework. The Namibian commons do not adhere to all principles and challenge a number of others.

Regarding property rights, the ownership of key components of the land resource is split between TAs, Conservancies and national government. This undermines the principle of 'one commons, one owner'. The splitting of ownership means that the Namibian commons challenge the flexible principle advocating that either public or collective ownership of the

commons parcel can work. The principle was originally presented as a dichotomy: Namibia illustrates the limitations in this approach.

The national government was found to have very little local presence in the TAs: The design principle requiring publically owned commons to have a local presence was violated.

The design principle relating to the need for small membership numbers is only met in pastoral/hunting-gathering TAs and their Conservancies, but greatly exceeded in the agro-pastoral TAs. Again, the Namibian case appears to confound the design principle.

Decentralised governance structures, another design principle, are evident for some resources in the Namibian case: however, modern local government is likely to replace existing structures in the medium term.

The design principle relating to internal democratic elections is not upheld in the TAs, however, Conservancies do use such processes.

Whilst they were not surveyed, a need for internal and external boundary records was actually evident: The design principle on boundary mapping was challenged.

Explicit sanctions were found to be superfluous, however, more due to the TAs inability to enforce rather than lack of violation of local norms. At any rate, national government was responsible for issuing and enforcing most relevant sanctions.

The organic growth of a mixed economy is impeded due to cattle being the primary form of capital accumulation. Moreover, the fact that most rights are vested in the state means there is limited development potential for TAs. Conservancies fair better through tourism, game hunting and sales and infrastructure building.

Geography is revealed to be a key factor in the location and persistence of the commons. They have survived and adapted through pre-colonial, two colonial and independence regimes.

Overall, the Namibian commons do not adhere to many design principles, both partially and fully (Table 3). However, the case also illustrates the need to further refine the principles or at least indicators relating to them: A number could not be properly assessed. Meanwhile, the study has revealed further issues not properly considered in the analytical framework. More consideration could be given to understanding the poor status of coverage regarding land surveying and registration in Namibia: Does the issue relate to complex government jurisdictions, budget limitations, or is political will and potential conflict more to blame? More attention could also be afforded to understanding what impact human-wildlife conflicts, carnivores-herbivores and tourism-pastoralism have on the management of the commons: These interactions are not an issue in Tyrol (where large carnivores (bear, wolf) and ungulates herds have been eradicated), but certainly of importance in Namibia.

Table 3: Comparison of presence/absence of eleven design principles for pastoral-cum-tourism commons in Tyrol and Namibia

No	Design principles	Tyrol	Namibia
1	One commons, one owner	Yes	No
2	Public or collective ownership	Both	Public
3	Public ownership with local presence	Yes	No
4	Small membership	Yes	Partly

No	Design principles	Tyrol	Namibia
5	Small shareholdings	Yes	Yes
6	Decentralized governance	Yes	Yes
7	Internal democratic elections	Yes	Partly
8	Boundary record: internal superfluous, external essential	Yes	Partly
9	Explicit sanctions are superfluous	Yes	Yes
10	Mixed economies	Yes	Yes
11	The triumph of geography	Yes	Yes

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