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Navigating through the storm: conservancies as local institutions for regional resilience in Zambezi, Namibia

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The COVID-19 pandemic has disrupted global production networks and challenged the resilience of regional economies to external shocks. The tourism sector was severely affected by the travel bans imposed, as were regions characterised by tourism development, such as Zambezi in northern Namibia. Nonetheless, with the support of the national government, conservancies, as local governance institutions, partly maintained the distribution of value from tourism throughout the pandemic and strengthened agriculture-tourism linkages to achieve long-term transformation. These findings suggest that local institutions are able to create regional resilience through their capacity to drive adaptation and adaptability in a diversified regional economy.

Keywords: regional resilience, value distribution, regional diversification, tourism-agriculture linkages, conservation, tourism GPN, COVID-19
JEL Classifications: O, Q, R

Introduction

The economic shockwaves caused by the COVID-19 pandemic immediately affected tourism as a consequence of imposed travel bans. Attempting to prevent the spread of the disease, the closure of borders has left firms and regions decoupled from global networks (Dallas et al., 2021; Oldekop et al., 2020). This disruption caused profound repercussions on regional and local economies, especially in rural areas with vulnerable social-economic structures and a high dependency on tourism (e.g. Niewiadomski, 2020).

This is problematic for rural economies that rest their hopes on tourism (Telfer and Sharpley, 2016): the arrival of international guests is expected to initiate capital influx, increase employment and stimulate innovation in peripheral regions that benefit from attractive flora and fauna but lack alternative development pathways. Despite these rather positive development effects, tourism is vulnerable to external shocks such as natural disasters (e.g. Tsao and Ni, 2016), raising questions about regional resilience, especially during a global pandemic.

The economy of the Zambezi region in northern Namibia is marked by high unemployment rates, poverty and a high dependence on subsistence farming and agriculture for food security (Hulke and Revilla Diez, 2022). Tourism is one of the few more globalised sectors in the region and the national government uses the policy of community-based natural resource management (CBNRM) as a vehicle to achieve economic growth. CBNRM aims to build local institutions able to protect the natural environment and valuates wildlife through the attraction of investors in the safari and hunting tourism sector (Gargallo and Kalvelage, 2021). Because of the reliance on tourism, the COVID-19 pandemic has left the conservancies as local institutions implementing CBNRM within 'a perfect storm' (Lendelvo et al., 2020).

This article explores, firstly, the impact of the COVID-19 pandemic on the tourism industry and CBNRM policy through its changing value distribution patterns and, secondly, tourism-agriculture linkages in the Zambezi region in north-eastern Namibia. Combining insights gained from the research on tourism global production networks (GPN) with a perspective on regional resilience, we examine the role of local, place-specific governance institutions to achieve regional resilience through value capture and distribution in the Zambezi region.

While the significance of local institutions—as both formal rules and regulations, as well as informal norms and values—in the context of GPNs have recently been highlighted (Kalvelage et al., 2020; Kleibert, 2014), their role in managing economic shockwaves caused by temporary decoupling of a region from tourism GPNs remains unclear. Following an intense discussion on regional resilience as a regions' capacity to recover from a shock and remain capable of long-term transformations (e.g. Boschma, 2015; Cretney, 2014; Hassink, 2010; Hu and Hassink, 2019), the COVID-19 pandemic presents a suitable moment to recap the developments made and revise applicability and usefulness of the regional resilience concept to assess regional development.

To this end, we study how locally bounded GPN actors build regional resilience at the local level by examining two questions: (1) How has the COVID-19 pandemic affected the capacity of local institutions to capture and distribute value? (2) What consequences do the changes in value capture and distribution have for building adaptation and adaptability in the region?

This article is structured as follows: firstly, we will outline current debates on regional resilience and link them to the growing body of research on global production networks. Secondly, the case study and methodology will be presented. Thirdly, the results section will give insights into the impact of COVID-19 on tourism and agricultural livelihoods, thus highlighting changing value distribution patterns and the dynamism of tourism-agriculture linkages. Fourthly, the role of conservancies for adaptation and adaptability will be illustrated, before conclusions are drawn.

GPNs and regional resilience

Regional resilience through adaptation and adaptability

The understanding of resilience has shifted from an equilibrium-based system theory to an evolutionary and dynamic one (Boschma, 2015; Martin and Sunley, 2015; Simmie and Martin, 2010) that highlights the transformative capacity of regions (Davoudi et al., 2013). The core notions of adaptation and adaptability in regional resilience are not uncontested due to their binary character (Hassink, 2010), but they do provide a conceptual distinction between short-term reactions to shocks and long-term, innovative change (Hu and Hassink, 2019). Adaptation builds on an understanding of resilience as the capacity to bounce back and recover. This would imply a return to a state prior to the crisis, such as 'an

equilibrium-based rebound in tourist expenditures or employment' (Christopherson et al., 2010: 5). Conversely, adaptability is the capacity of a regional economy to create new pathways and transformations, such as economic diversification towards future-oriented sectors. This is important for regional development because it 'echoes the argument that diversified economies are more adaptable because they act as a "shock absorber"' (Pike et al., 2010: 65).

It has recently been argued that both adaptation and adaptability are important components for regional resilience, raising the question as to how both can be equally accounted for in policy strategies: 'the long term evolution of a regional economy will most likely involve with both adaptation and adaptability. And the ways in which they interact over time are indicative of the differentiation of regional economic resilience' (Hu and Hassink, 2019: 11). Hence, in the complex evolution of regional resilience, adaptation and adaptability are assumed to co-evolve and dynamically influence each other.

Hu and Hassink (2017; 2019) differentiate five types of adaptation-adaptability relationships: (1) they *oppose* each other, thus contradicting their effect; (2) they are *separated*, thus unrelated with relatively little effect on regional resilience; (3) *adaptation enables adaptability*, where local actors mobilise place-specific resources; (4) *adaptation benefits from adaptability*, initiating potentially less regional resilience, and (5) a *complementary, reciprocal* relationship, exploiting GPN-specific assets. The form of relationship is dynamically constructed by 'broader social, economic and institutional environments' (Hu and Hassink, 2019: 15) and local agency (Gong et al., 2021), two factors that require further empirical research.

Hence, the capacity of regions to adapt to shocks and risks can have a positive impact on the capacity to transform in the long run (Martin and Sunley, 2015). This can be achieved specifically through strengthening the interactions between both adaptation and adaptability in creating synergies between various industries in a diversified economy (Boschma, 2015; Hu and Hassink, 2019; Pike et al., 2010). However, the role of multi-scalar institutions and local actors' agency in building resilience has not been sufficiently addressed (Boschma, 2015). We, therefore, integrate GPNs, especially, as drivers and determinants of regional resilience, with a special focus on local institutions governing value distribution. By showing how they influence adaptation and adaptability, the GPN framework can help capture the dynamics of resilience in a region embedded in globalised networks (Gong et al., 2021).

Local institutions and value distribution in GPNs

Briefly summarised, the GPN framework aims to explain uneven regional development outcomes through their linkages to the global economy (Coe and Yeung, 2015; Yeung, 2015). Regional institutions mediate a strategic coupling process between the needs of the lead firm and regional assets embedded in regions (Coe, 2021; Horner, 2014). Increasingly, the *dark sides* of economic globalisation are addressed by including the perspective of actors that are directly or indirectly affected either through their integration in or disarticulation from a GPN (e.g. Bair and Werner, 2011; Coe and Hess, 2011; Kelly, 2013; Phelps et al., 2017). Following this understanding, firms in GPNs have the capacity to transform a region after a crisis—or leave it behind and cause a decline in resilience (e.g. decoupling, see Horner, 2014).

We propose that GPN research can enrich the examination of regional resilience by investigating how coupling and decoupling of industries in a region affect its local economy concerning dependencies, lock-ins, and regional diversification. In our view, one way forward is to include in the analysis the capacity of local institutions to capture and distribute value from GPN integration (Fold, 2014). By

operationalising value capture and distribution by local institutions as the necessary enabler of both adaptation *and* adaptability, we aim to explain the capacity of regions to induce long-term transformation paths.

The GPN framework conceptualises regional institutions as organisations or actors orchestrating processes of strategic coupling, such as state agencies, lobby or labour associations, to understand how and under which conditions lead firms enter a specific region (Coe et al., 2004; Smith, 2015; Yeung, 2015). Through strategic coupling, value in the form of surplus value and economic rents is created, enhanced and captured. The latter addresses 'which actors and locations in the network are able to appropriate and retain value, highlighting questions of ownership and control' (MacKinnon, 2012: 229). Value capture implies that 'local institutions and non-firm actors are able to retain and channel resources through ties to GPN into investments vital for long-run regional development' (Murphy and Schindler, 2011: 64).

Through the negotiation processes of GPN actors, including local institutions and the state, resources captured at the local level should ideally be transferred into investments for regional development (Murphy and Schindler, 2011). This conceptualisation has two major downsides: firstly, it condenses a variety of institutions *as rules of the game*, both formal and informal, on multiple spatial scales (Smith, 2015). In particular, subnational and local scales are not fully taken account of (Kleibert, 2014). Secondly, it does not grasp value distribution patterns at a local scale, since regions can show positive value capture on an aggregate level but the distribution of benefits among actors within the region remains highly unequal (Christopherson and Clark, 2007; Fold, 2014). While the importance of local institutions in patterns of value capture has recently been emphasised (Kalvelage et al., 2020), their agency in governing value distribution needs further examination.

Comparable to a 'sandwich structure', regional resilience is, therefore, constituted through local value capture via GPN firms and value distribution via local institutions. Thus, formal and informal institutions on various scales can determine regional resilience by creating an open environment for new sectors to emerge, while at the same time allowing for the broad distribution of the value created, employment opportunities or other endogenously developed livelihood strategies to avoid lock-ins and negative path development (Boschma, 2015; Breul et al., 2021).

In sum, regional resilience depends on the distribution patterns at a local scale and the ties into which resources are channelled. Rents and surplus value can be distributed, for instance, through investments in infrastructure (Irarrázaval, 2022), but also education and institution building. Through their distributive function, local institutions can provide much broader impulses for regional development, firstly, through investing in adaptation measures as a direct response to shocks and, secondly, through building a diversified economy that enables adaptability. Value distribution is, therefore, a relevant determinant of the relationship between adaptation and adaptability.

CBNRM as a concept for regional resilience

Community-based natural resource management (CBNRM) depicts a political tool, local governance form and regional development strategy, aimed at establishing sustainable resource management institutions to valuate nature and strengthen endogenous development. Members annually elect a management committee that implements nature conservation measures, hires game guards and monitors adherence to different use zones (Mosimane and Silva, 2015). Under considerable government and NGO support, conservancies attract investors to erect lodges and, in a bidding process, professional hunters acquire hunting quotas that are used to sell hunting packages to

wealthy customers. Thus, conservancies govern the coupling of regions and their residents with the tourism GPN, both for hunting and safari tourism (Kalvelage et al., 2020).

As tourism was one of the most severely affected sectors in Africa, there is a growing number of studies looking at COVID-19 as an external shock on the configuration of the tourism GPN (Giddy and Rogerson, 2021; Onsomu et al., 2021; Rogerson and Baum, 2020; Rogerson and Rogerson, 2020). Because of the dependence of nature-based tourism on international travellers, 'adaptive measures cannot replace the revenues formerly generated from the international tourism market' (Giddy and Rogerson, 2021 the punktuation for page numbers in direct quotes is not consistent, sometimes a : is used, sometimes a, 698), even with the help of government support.

Yet, tourism is embedded into the wider regional economy. Existing studies on linkages between tourism and agriculture in rural areas show that supply linkages can benefit both sectors and increase revenues (Mtapuri et al., 2021; Pillay and Rogerson, 2013; Rogerson and Rogerson, 2014). Utilising local resources, and thus integrating local suppliers into the tourism sector, can generate economic growth and secure livelihoods, as highlighted by Mtapuri et al. (2021). However, exclusionary effects are possible, especially for poor farmers, from these supply channels (Pillay and Rogerson, 2013). Examining these linkages more holistically, a recent study shows that the emergence of tourism businesses in the Zambezi region has positive *and* negative effects on the agricultural sector, highlighting sectoral interdependencies when promoting certain economic sectors (Breul et al., 2021).

To achieve CBNRM's proclaimed aim of generating benefits for conservancy members to be compensated for conserving and living with wildlife, the distribution of conservancy income among its members is inevitable to legitimize this institution (e.g. Bollig and Vehrs, 2020; Schnegg and Kiaka, 2018). Moreover, farmers that operate within conservancies need special attention since they are largely affected by nature conservation and tourism activities (Breul et al., 2021; Hulke et al., 2020).

This raises the question that determinants can, in fact, contribute to regional resilience in tourism-driven economies. By analysing CBNRMs capacity to cope and mitigate in times of crises, we argue that attention needs to be drawn to the agency of these local institutions to capture and distribute value from GPNs, as well as their capacity to strengthen other economic sectors in the region.

Based on the combination of regional resilience and GPN literature, Figure 1 illustrates the conceptual framework of this study, combining adaptation and adaptability in regional resilience with GPNs capturing value and local institutions distributing value. To show the applicability of the conceptual framework, in the following section, we draw on the case of CBNRM and the tourism GPN in Namibia. The analytical categories and interrelations of adaptation and adaptability for value capture and distribution guide our empirical analysis.

Case study and methodology

The CBNRM approach in Namibia, promoted since the 1990s, is generally perceived as a success model, since it safeguards wildlife populations, introduces democratic institutions to rural areas marked by traditional leadership and opens up new income opportunities through the promotion of the wildlife-tourism sector (Mosimane and Silva, 2015). In 2017, 98% of the conservancy income was generated through hunting and safari tourism indicating the dependence of Namibian conservancies on international tourism. Alternative income sources, such as the marketing of forest and craft products, accounted for only 2% (NACSO, 2017). To date, there are 15 conservancies in the Zambezi region, a region that largely relies

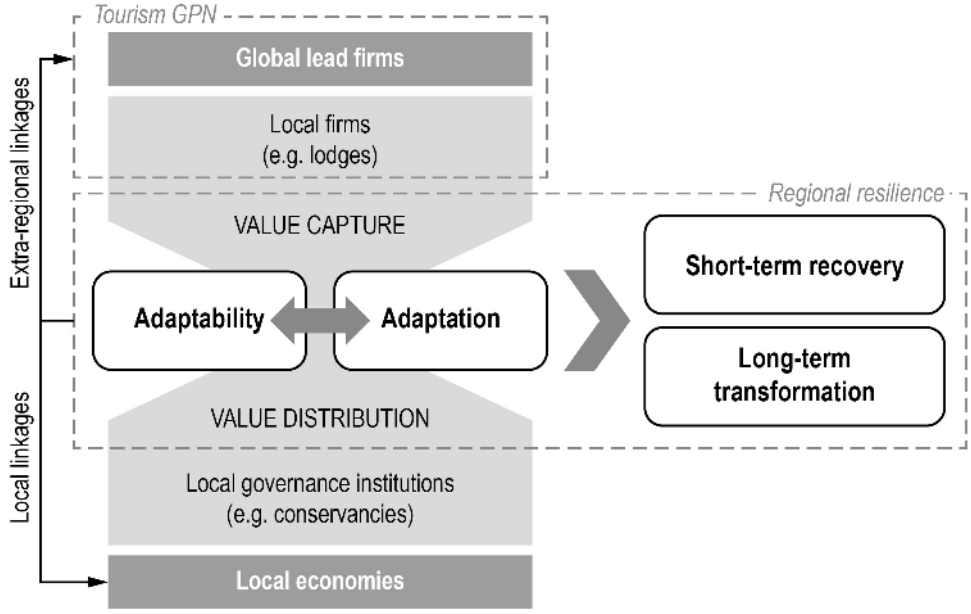

Figure 1. *Conceptual framework: value capture and distribution in building regional resilience.*

on small-scale agriculture with an emerging tourism sector fostering its embeddedness in global production.

Out of the 15 conservancies in the Zambezi region, seven case study conservancies were sampled, covering a range of characteristics such as length of existence, distance to rivers/national parks, population size, or density of tourism businesses (Figure 2): Mayuni, Kwandu, Dzoti, Sikunga, Salambala, Mashi, and Impalila, which we anonymised for this analysis. The authors and enumerators met during regular online workshops to jointly develop the questionnaire and interview guidelines and to agree on the sampling strategy and implementation of the study.

A mixed-method approach was employed to identify the ability of conservancies to foster regional resilience. A conservancy resident survey based on a structured questionnaire was complemented by structured and semi-structured interviews with stakeholders, conservancy management, farmers, and tourism businesses, supplementing the survey with qualitative, in-depth insights. By doing so, both the household/individual level of analysis can be triangulated with the firm-level as well as the broader institutional framework.

Following a pretest, 20 residents were targeted in each conservancy. The sampling was done randomly with the help of the conservancy management boards or village headmen to ensure acceptance of the research. Face-to-face interviews were conducted in the local language on the respondents' perception of the impact of COVID-19 on their lives and the natural environment. This approach ensured a high response rate and a high data quality, resulting in a sample of 137 completed surveys. With a total population of roughly 23,000 residents in all case study conservancies, the sample is far from being fully representative but is equipped to illustrate major trends. Enumerators translated the results into English, while completing the paper-based questionnaire.

The resident survey was complemented by structured and semi-structured interviews with relevant actors from the tourism

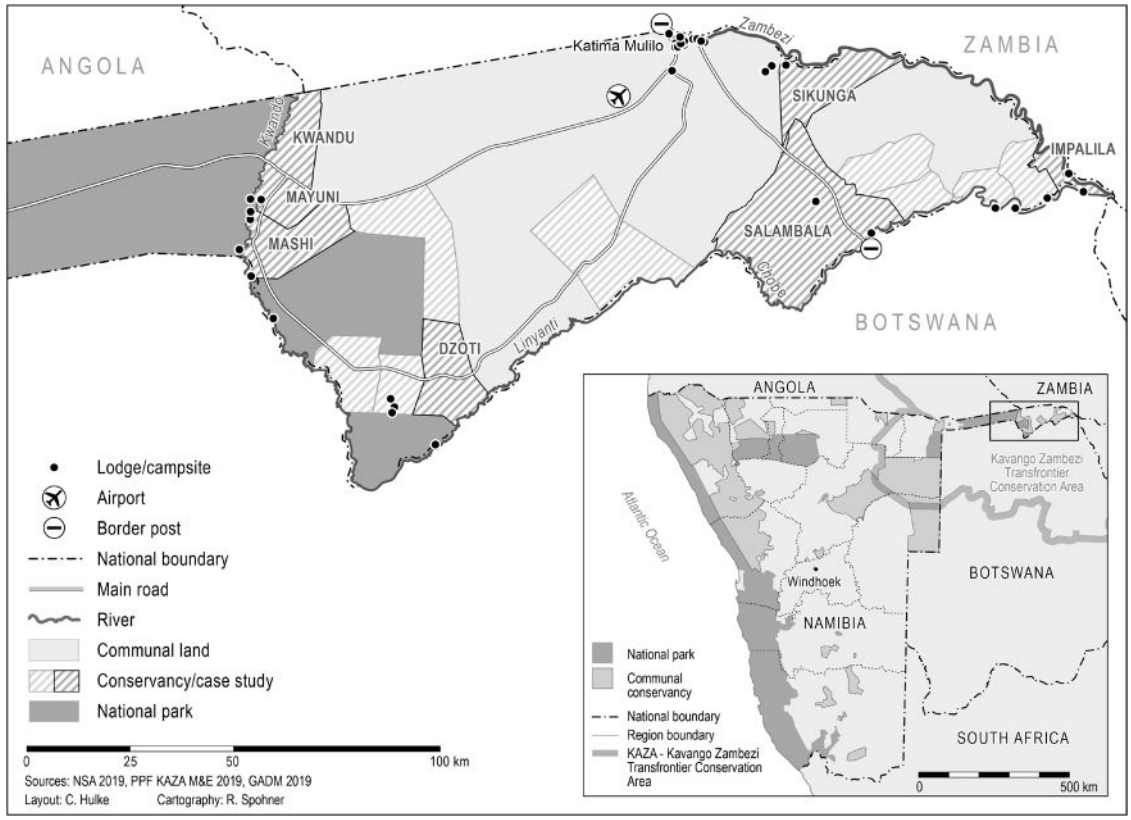

Figure 2. *Map of the case study areas.*

GPN, agricultural sector and pertinent organisations. The purpose of the study was explained to the respondents and they consented to be interviewed, while being assured of anonymity. Purposive sampling was done in selecting interviewees from the regional heads of wildlife, tourism and agriculture, conservancy management boards, NGOs, lodge owners and business owners. For the data analyses, we firstly calculated descriptive statistics of the resident's survey (such as location parameters, measures of dispersion, frequencies). Secondly, the interview material was transcribed, translated into English if necessary and coded, following a deductive coding scheme guided by the research questions based on a qualitative content analysis. Table 1 summarises the database and IDs used in the empirical analysis.

The impact of COVID-19 on regional resilience in Namibian conservancies

Conservancies and the tourism GPN: changing value capture

High expectations rest on tourism for economic development in the Zambezi region, since it is one of the few sectors that attracts extra-regional investments. The overall turnover from hunting and safari tourism was estimated to be around USD 10 million in 2017 and conservancies are able to capture roughly 20 % of the gains (Kalvelage et al. 2020). Tourism is

Table 1. *Overview of the database*

Sector	Method	Number	Actor group	ID
Conservation	Structured interview	30	Conservancy management	CON-M-#
	Semi-structured interview	2	Stakeholder	CON-ST-#
	Structured quantitative survey	137	Conservancy residents	CON-RES-#
Tourism	Structured interview	7	Accommodation establishment	T-LOD-#
	Semi-structured interview	1	Stakeholder	T-ST-#
Agriculture	Structured interview	25	Farmer/producer	A-P-#
	Structured interview	13	Retailer	A-R-#
	Semi-structured interview	3	Stakeholder	A-ST-#
Total		**218**		

one of the few employers in a region marked by subsistence agriculture, yet only 4% of the total workforce is employed either in tourism businesses or by the conservancies and tourism only contributes 5.5% to the total household income in the Zambezi region (Kalvelage et al. 2021).

The COVID-19 pandemic has deeply disrupted the tourism GPN and, consequently, the income of conservancies and related value distribution patterns. In Namibia, the estimated losses due to the travel bans in 2020 sum up to N$55.3 million (USD 3.3 million) in annual tourism revenue (Lendelvo et al., 2020).

The first COVID-19 cases reported in Namibia on 13 March 2020 were a tourist couple from Europe. In view of tourism's threat to public health, the Namibian government immediately declared a state of emergency, entailing a ban on international travel, the closure of all borders and nation-wide travel restrictions. A series of lockdowns were effected to prevent the spread of the virus until 1 September 2020, when Hosea Kutako International Airport was re-opened as part of the *International Tourism Revival Initiative*, a range of legislative measures to facilitate international travel by the *Namibian Tourism Board*.

These travel bans had serious consequences for the tourism sector in the Zambezi region, however, the impacts on different GPN actors vary. Lodges report a complete standstill of activities during the period from March to September 2020, due to travel restrictions to Namibia from Europe, one of the key tourism outbound continents (T-LOD-1). Even when travel bans were lifted, tourism recovered slowly and the few international guests often refused to travel to the north-eastern corner of the country, opting instead for established destinations in the southern regions. The Zambezi region's touristic attractiveness builds on its strategic position along the way to landmarks in neighbouring countries, such as Victoria Falls in Zambia and Zimbabwe. Increasing administrative burdens when crossing borders, COVID-19 tests, for instance, deterred tourists from travelling to the north-eastern Zambezi region (T-LOD-2).

As international arrivals drastically declined, the tourism industry launched the *Local tourism is lekker* initiative with the aim of fostering domestic tourism. Adapting to the new business environment, lodges in the Zambezi region offered a number of discounts for Namibian guests and invested in the upgrading of the lower price segment by erecting new tents, for instance. However, these efforts could only partly compensate for the immense losses. Depending on the business model, booking rates in 2020 were only 2.5–5% compared to the pre-COVID-19 period (T-LOD-2). This resulted in financial difficulties for lodge managers: outstanding

balances were not paid because tour operators went bankrupt, bookings were cancelled and payments had to be refunded, while the operational costs for the lodge, including staff salaries, remained (T-LOD-2).

After an initial three-month retrenchment ban imposed by the government, many lodges decided to lay off workers, send them home on a reduced salary (25–50%, T-LOD-5, T-LOD-4), or introduced monthly rotations. Larger companies tended to be able to retain staff (T-LOD-3), due to cross-financing or spare capital helping to mitigate immediate negative effects. In Conservancy G, where lodges are part of larger domestic or transnational corporations, lodge employment reduced from 131 in 2019 to 100 in 2020 and, similarly, lodges owned by the large Namibian private company *Gondwana Collection* did not need to lay off workers. In Conservancy D, on the other hand, where businesses are mostly owner-run, lodge employment dropped from 31 (2019) to 10 (2020).

Hunting tourism was similarly affected by international travel bans in the first phase of the pandemic. Since large shares of the yearly hunting quotas awarded by the government could not be used, prices for trophy animals dropped drastically (CON-M-14), an elephant, for instance, that could bring conservancies up to N$180,000 (USD 11,900) was sold for N$100,000 (USD 6,600). These dynamics had a direct effect on value capture in conservancies. The figures retrieved from conservancy interviews show a considerable drop in conservancy income (Table 2), which is only partly substituted by donor and government funds.

To ensure operations and anti-poaching measures, the Ministry of Environment, Forestry and Tourism (MEFT) together with a number of third-party donors installed the *Conservation Relief, Recovery and Resilience Facility (CRRRF)*. CRRRF made quarterly payments to the conservancy managements, which financed 80% of their salaries, running costs and transport to maintain essential services. This ranged from N$100,000 (USD 6,600) to N$600,000 (USD 39,800) of the annual budget of conservancies.

Table 2. *Income* in case study conservancies, 2019 and 2020 (in N$ and (US$)). Based on CON-M-1-30*

	Income 2019	Income 2020
Conservancy A	828,000 (52,000)	46,000 (30,500)
Conservancy B	400,000 (26,500)	172,000 (11,400)
Conservancy C	5,500,00 (232,000)	1,435,000 (95,100)
Conservancy D	1,100,000 (72,900)	478,000 (31,700)
Conservancy E	1,850,000 (123,800)	1,090,000 (73,000)
Conservancy F	390,000 (26,000)	130,000 (8,600)
Conservancy G	791,000 (50,500)	0

*The numbers were provided to the authors by members of the conservancy management board, mostly by the bookkeeper or chairperson. As official statistics on conservancy finances are not publicly available, the authors rely on field data published here to the best of their knowledge.

To recap, those companies embedded into wider corporate structures were able to contribute to regional adaptation through the continuous payment of (at least parts of) salaries. Because of decreasing tourism arrivals, the conservancy maintained value distribution through various forms of benefit sharing, although they captured less value from the tourism GPN. This points out the immense importance of the integration into global tourism for the success of the current Namibian CBNRM model. Nevertheless, due to their mediating position, conservancies managed to use national government support and donor funds to compensate for value captured from the tourism GPN (Kalvelage et al., 2020) that partly make up for the decline in revenues.

Value distribution

A core objective of CBNRM is to support rural development through the empowerment of conservancy members, both financially and in terms of agency. To do so, conservancies usually aim to distribute 50% of their income to residents, while the other half is used to cover operational costs (e.g. transport, daily allowances, and salaries). We identify three value distribution channels by the conservancy as the local institution that distributes captured value from tourism to the local level: firstly, conservancy employment, secondly, indirect benefit sharing through community investments, and thirdly, direct benefit sharing.

Conservancy employment increases household income significantly, but the number of beneficiaries is limited to 411 employees in the whole Zambezi region (NACSO, 2017). Therefore, it has a direct, albeit limited effect on broader regional development. Conservancy employment consists of the management, game guards, area representatives, and maintenance staff. These employees receive regular salaries that have proven to be relatively stable during the pandemic.

Despite the fact that 16 employees lost their jobs, the resident survey found nine new employees. In Conservancy E, the expenditure for conservancy salaries even doubled from 2019 to 2020, although conservancy income dropped sharply by more than 60% in 2020. Support from the CRRRF scheme enabled Conservancy E to maintain the payment of salaries throughout the crisis. Keeping the conservancy running is a crucial factor for adaptive capacity as it depicts the central role of the local institution for distributing value captured from the tourism GPN. How the conservancies reinvest their income, however, is crucial for their capacity towards transformative path development that assures the possibility of regional diversification (Hu and Hassink, 2019).

Besides the payment of salaries, community development programmes, such as the electrification of villages, scholarships or investment in infrastructure like borehole drilling (resident survey), aim to have a broader impact on regional development within conservancies and can potentially induce future transformations. For instance, the attraction of new industries, such as food processing, logistics or renewable energy, relies on a stable connection to the electricity grid.

Lastly, direct benefit sharing is implemented either via cash pay-outs, human-wildlife conflict (HWC) offset schemes, or game meat for food from hunted wildlife. Aggregating all conservancies, the survey shows a sharp decrease in cash benefits and the amount of game meat received by members (Table 3). Both value capture and value distribution at a regional level have, therefore, decreased. Nonetheless, donor or government funds and conservancy savings to directly cope in the most critical phase of the pandemic creates security that would have not been available without the conservancy institutions.

It appears that value distribution patterns do not only depend on the financial capacity but also on the institutional quality of the conservancy management. This implies the individual willingness to invest not only in the maintenance of the conservancy body itself, but to contribute to benefit sharing, knowledge, and training on financial management, and the

Table 3. *Distribution of hunted game meat and cash by the surveyed residents in the case study conservancies, 2019 and 2020, own calculations*

	2019	2020
Residents who received cash benefits (*n* = 137)	12%	5%
Residents who received game meat (*n* = 137)	34%	20%
Average amount of cash benefits per conservancy, in US$	435	39
Average amount of game meat per conservancy, in kg	56	32

relationships that are established to the support organisations and businesses. However, there are '*instances of financial mismanagement in conservancies. However, it seems even if you release clear financial mismanagement in conservancies, nothing really takes place. It is just reported, but people are not held responsible*' (CON-ST-1).

During the pandemic, as visible in the case of Conservancy E, cash benefits even increased (Table 4). This indicates the adaptive capacity of conservancies to function as a shock absorber, being able to spend savings from previous years to ensure ongoing operation. Not only are operations maintained, but future-oriented community projects and effect cash pay-outs to members are kept up (Table 4). Conversely, in Conservancy D dissatisfaction with the distribution of benefits is high among members and criticism has arisen stating that managers are using the remaining funds for their benefit in the form of allowances (CON-M-20).

From the above, it becomes clear that through value distribution, conservancies can act as shock absorbers in times of crisis, when well managed. Both employment and benefit distribution increase adaptation for regions, and depending on the kinds of investment, adaptability is a possible outcome.

Broader economic impacts and agricultural livelihoods

Despite the focus on safari and hunting tourism for regional development in the Namibian CBNRM model, small-scale agriculture remains as one major economic pillar with a high social-cultural significance in the Zambezi region and most local livelihoods depend on subsistence farming and small-scale surplus selling (Hulke et al., 2020).

Pre-COVID-19 linkages

Case studies have highlighted the potential of providing supplier linkages between tourism enterprises and local farmers (Mtapuri et al., 2021; Pillay and Rogerson, 2013; Rogerson and Rogerson, 2014). In the Zambezi region, looking at interlinkages between the tourism sector and agricultural livelihoods before COVID-19, the effects were variegated. Negative path development in agriculture has resulted from the demarcation of land-use zones in the process of establishing a conservancy as both sectors compete over the same scarce resources such as land and access to water (Breul et al., 2021). To ensure wildlife habitats within conservancies which ultimately attract tourism businesses, conservancies must reserve parts of their territory for tourism, hunting and wildlife which results in farmers losing access to fertile lands close to rivers and access to water to irrigate their fields (Breul et al., 2021). Moreover, living and farming in close proximity to wildlife results in increasing crop raids and damage to agricultural infrastructure such as boreholes. In some cases, synergy effects between the two sectors exist that have the potential to accelerate economic growth (Breul et al., 2021). Lodges,

Table 4. *Expenditures is Conservancy E, 2019 and 2020 (in N$ and (US$)). Based on CON-M-24-17*

	Operational costs	Staff salary	HWC	Community projects	Auditing & legal fees	Cash pay out	Total expenditures (incl. donations)
2019	480,000 (32,200)	901,000 (60,500)	60,000 (4,000)	433,000 (29,100)	90,000 (6,000)	n.a.	1,964,000 (131,900)
2020	119,000 (8,000)	1,800,000 (120,900)	60,000 (4,000)	645,000 (43,300)	20,000 (1,300)	475,000 (31,900)	3,119,000 (209,500)

campsites and restaurants represent new markets for local farmers, which has partly contributed to the emergence of a regional value chain in horticulture within Zambezi. Upgrading of agricultural production, for example through quality standards, input access or product variety, is supported by investments from tourism enterprises in agricultural infrastructure. Thus, tourism enterprises ensure stable procurement structures for their own supply network. Knowledge of newly demanded crops and quality standards integrate farmers into more stable supply channels (Breul et al., 2021).

Tourism-agriculture linkages during the pandemic

The ruptures in the tourism sector caused by the pandemic had severe repercussions on the agricultural sector: linkages to tourism businesses were partly disrupted, conservancy income severely declined and livelihood activities connected to conservation were endangered (CON-M-5/14). As a response, there are three visible trends: firstly, the expansion of agricultural activities and natural resource use as coping strategies; secondly, disruptions of tourism-agriculture linkages due to reduced demand from lodges but increasing demand from retailers for local supply; and thirdly, the reorientation of conservancies aiming to include agriculture in their policies.

Regarding the first point, smallholders decide to shift (back) to agricultural activities out of necessity. This expansion of agricultural activities collides with the prior attempt of conservancies to reduce the importance of agriculture with the help of tourism income: '*Some people are even moving into the wildlife zones to farm because they say they do not see the importance of the conservancy anymore, since there are no benefits. Their families have lost their jobs from the lodges'* (CON-M-20). Interviews in most study sites indicate that crop farming has increased but so have harvest losses due to wildlife crop raids (CON-M-14).

These findings are congruent with the conservancy resident's survey; 65% of the respondents perceive an increase in human-wildlife conflict within conservancies, leading to losses in crop harvest. Additionally, 65% of the sampled residents have experienced an increase in crop farming within their conservancy. This increase in farming activities puts pressure on wildlife zones to expand agricultural land. In this scenario, farmers move closer to wildlife and are more exposed to conflicts as a statement from the management of Conservancy D exemplifies: "*The conflict arises because more farmers are now farming on a commercial scale. They are clearing more lands, including the wildlife corridors and the conservancy is losing the wildlife core areas. These activities affect the conservancy"* (CON-M-21).

Regarding the second point, the pandemic has caused disruptions to established regional food supply channels in the Zambezi region. To react to the increasing cases of COVID-19, the government has restricted cross-border trade and food imports as well as trade within the Zambezi region. The activities of middlepersons and street vendors who organise the supply of regional supermarkets and connect local farmers to markets in Katima Mulilo town have been severely affected (A-ST-2; A-P-5; A-R-1-5/12). As street vendors could not comply with hygiene requirements, their operations were forbidden. Despite these negative developments and setbacks, retailers increasingly acknowledge the benefits of a local supply: '*Pricing, the cost has gone up and we are trying to sustain the business. We are looking at all areas where we can cut the costs, so buying local is cheaper than buying in South Africa like we used to. The transport costs and the middleman are expensive*' (A-R-7). To cope with the absence of middlepersons, producers engage in value-adding activities such as packaging or on-farm upgrading (A-P-20/23; A-R-5). Interestingly, in Conservancy E, COVID-19 donor money for nature conservation was invested in farming: '*I got water using*

a bucket but I applied and was given N$40,000 (USD 2,700). I made a 20-meter borehole. The CRAVE project also assisted by installing a solar pump to pump water and removed the generator that I was using. Now we are going to plant on half a hectare' (A-P-23). With these efforts, farmers increasingly produce for the local market and, thus, contribute to food security within conservancies.

Coupled with food import bans from neighbouring countries, many residents engage in crop farming to maintain food security (A-ST-1) and make use of the opportunity that arose from limited outside competition (A-P-1/25; A-R-3; CON-M-30; CON-ST-1): *'Some of the producers have signed contracts and many of the local retailers are now accepting our local farmers' produce on their shelves'* (A-ST-1). Food supply to lodges that are located in conservancies provide new markets and, thus, income opportunities for farmers, especially for horticulture products (Breul et al. 2021). As employment possibilities in tourism businesses and conservancy management are limited (Kalvelage et al., 2020), the emergence of agricultural value chains integrating small-scale farmers into formal supply channels is one possibility for regional diversification and, thus, adaptability. Apart from increasing demand from local supermarkets, the large Namibian company *Gondwana Collection* maintains their supplier linkages with local farmers (T-LOD-6), indicating a contribution of these linkages for regional resilience.

Thirdly, within the last year there has been a new trend towards conservancies including agriculture in their development strategies. In Conservancy A, Conservancy D, Conservancy E, and Conservancy F, plans to diversify income and job opportunities in tourism *and* agriculture (e.g. through aquaculture, poultry farms, goat keeping, community lodge) might be a hint of long-term economic transformation (CON-M-5/20/23/29).

The role of conservancies for adaptation and adaptability

COVID-19 has had variegated effects on the economy in Zambezi. While tourism has shown a negative development, agricultural production has expanded. The CBNRM model is clearly vulnerable due to its strong dependency on tourism. However, CBNRM is capable of triggering regional diversification and, thereby, achieving broader regional development goals that include most livelihoods. Conservancies as local governance institutions play a major role in creating adaptive capacities through capturing value from the tourism GPN and receiving financial capital from government support schemes. This direct effect is partly coupled with adaptability where common, future-oriented investments target development in agriculture and, thus, instigate regional diversification.

Firstly, through the agency of conservancies to distribute value and maintain linkages to the tourism GPN (through employment, benefit sharing, and food supply), they partly function as a shock absorber (Boschma, 2015). Therefore, they are highly relevant for adaptation. The differences we revealed between various conservancies (e.g. Conservancy D and Conservancy E), however, indicate that this positive effect on regional resilience depends on the institutional quality of the individual conservancy and their firm landscape. The type of firm (owner-run vs. larger companies) determines their adaptive capacity through value capture and distribution. Due to larger capital reserves, larger companies, compared to owner-run businesses, are able to maintain payments during the pandemic. Hence, both tourism lead firms and local governance institutions are crucial mediators for adaptation.

Secondly, the expansion of agriculture within conservancies is clearly visible. Due to closed borders, the importance of food production both for own consumption but also as an income-generating activity was recognised

in conservancies and partly supported by the conservancy institution. To actually contribute to regional resilience, the further support of agricultural regional value chains within conservancies would need to be sustained in a post-COVID economy, where local farmers will be exposed to outside competition. Based on prior studies on such regional value chains, it can be assumed that strong regional supply networks, knowledge of quality standards and production practices, and supplier linkages can contribute to a competitive regional economy (Ahmad and Primi, 2017; Hulke and Revilla Diez, 2022; Scholvin et al., 2021).

In sum, tourism-agriculture linkages in the case study area will probably intensify, which is an indicator for adaptability that is closely linked to adaptation measures by the economic setting that were already in place. Therefore, we did not identify negative trade-offs between adaptation of the local environment and openness for adaptability pathways (Boschma, 2015). Rather, the relationships seem to be mutual and enabling (Hu and Hassink, 2019), showing a strong interconnection between direct adaptation measures via the conservancy institution and agricultural livelihoods and future adaptability pathways where tourism and agriculture sectors are closely connected through joint projects, even within conservancies. Hence, fostering regional diversification and recognising sectoral linkages and interdependencies is necessary to capture the regional economy as a whole and create synergies for regional resilience (Breul et al., 2021; Hu and Hassink, 2019; Mtapuri et al., 2021).

Collective, local governance institutions, such as the conservancy, can have the capacity to maintain value capture and distribution in times of crisis for short-term adaptation measures. They can also use their resources for future-oriented, cross-sectoral development projects that can induce long-term adaptability, as our case study has shown. Additionally, the funding scheme implemented by the Namibian government to support the operations of conservancies largely replaced the value captured from the tourism GPN before the pandemic (Kalvelage et al., 2020). This indicates a new role the state can fulfil during a major crisis (see for instance Dallas et al., 2021), acting as shock absorber, but also raising questions on the sustainability, dependencies, and inclusiveness of this role that could be the subject of future research.

Conclusion

The COVID-19 pandemic has severely disrupted the tourism GPN which manifests in regions where tourism businesses operate and capture value, such as the Zambezi region. Empirically, this study emphasised the possibilities of adaptation and adaptability in conservancies depending to a large extent on their linkages to the tourism GPN by showing how value distribution can induce regional resilience. Conceptually, we thereby showed the role of local institutions in constituting a synergetic relationship between adaptation and adaptability through value distribution and value capture from GPNs. These processes are shaped by the position of regions within the global economy through GPN links, determining the possibilities of adaptation and adaptability for long-term transformation. Combining GPN components with regional resilience facilitates 'understanding more about how regions can encourage "transformative development from below" and thus diversity, modularity (…) and connection with the outside world in ways that expand their options for adjustment rather than constrain them' (Christopherson et al., 2010: 8).

We found a reorientation of local institutions brought about by the decline of tourism income, disruptions in the benefit distribution scheme of the conservancies and the resulting restructuring of agricultural activities towards local and domestic value chains. Simultaneously, conservancies are able to collect private capital

from tourism businesses, donor money and government funds to keep their operations running and their dependence on tourism reviewed the need for regional diversification and, consequently, an orientation towards agriculture. Opportunities for adaptation and, thus, short-term recovery lie in the expansion of agricultural activities and food production in conservancies. Moreover, local initiatives for domestic tourism can be a buffer to cope with the absence of international tourists (Rogerson and Baum, 2020). Opportunities for adaptability that can initiate long-term transformation lie, for instance, in building stronger linkages between regional actors in all sectors for a diversification of income sources and livelihood activities through cross-sectoral projects. The restructuring of agricultural value chains, where local producers are increasingly targeted by private supermarkets and lodges, can potentially engender a transformation in the agriculture sector that is synergetic with growth in tourism.

These findings can inform various case studies that aim to analyse regional resilience as an outcome of connections to global markets and local institutions, for instance, in the form of collective action and social networks and thus refine the regional resilience concept. Hence, now and in the aftermath of the pandemic, more studies are needed on resilience building in regions that are coupled to or decoupled from GPNs, specifically examining value capture and distribution by local institutions. As this study only provides a snapshot, and many effects of the pandemic are yet to become visible, long-term quantitative and qualitative panel studies could be useful to trace transformative pathways through adaptability. Moreover, it was beyond the scope of this study to address the crucial question of 'resilience for whom' and, thus, the possible exclusionary effects in the process of resilience building as, for instance, highlighted by Cretney (2014). The question who benefits and who is left out in transformative processes should, therefore, be addressed in future studies.

Based on the empirical insights into the processes of regional resilience during COVID-19, we support a dialogue between GPN and regional resilience literature (Gong et al., 2021). Resilience literature can benefit from the clear operationalisation of the adaptability-adaptation relationships through value capture and distribution to overcome the oft-mentioned fuzziness of resilience in research and policy making. Moreover, regional resilience can be a meaningful category in GPN research to examine uneven development, dark sides, or disarticulation (Bair and Werner, 2011; Phelps et al., 2017) in times of multiple crises in a future-oriented, constructive manner. The dynamic perspective of relationships between a region's capacity to adapt and transform addresses recent calls in economic geography to include an EEG perspective in GPN studies (Yeung, 2021) in order to combine 'the internal dynamics of regional change and the extra-regional/transnational network' (1005). By joining these forces, pathways to more resilient economies can be found which has particular importance for vulnerable or rural African regions.

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