Resource Mobilisation
for Biodiversity Conservation

Nature counts!

www.resmob.org

POLICY BRIEF 7

PAYMENTS FOR ECOSYSTEM SERVICES IN COMMUNAL CONSERVANCIES

COMMUNITY CONSERVATION: should safeguard environment and promote sustainability of natural resources

A boat being readied for a tourism sightseeing trip on the Okavango River. Picture: Gys Reitz

COMMUNITY CONSERVATION GREW RAPIDLY OVER LAST 20 YEARS

In Namibia, rural communities live in areas with few economic opportunities, particularly in the more arid regions where agricultural activities are limited. The Community Based Natural Resource Management (CBNRM) programme provides the opportunity for communities to benefit from the sustainable use of natural resources, with the main principle being to align conservation outcomes with the socioeconomic needs of local communities. Registered conservancies have rights over wildlife and can enter into joint-venture (JV) tourism and hunting arrangements or develop their own income-generating operations such as community campsites. This theoretically provides the incentive for implementing actions to protect wildlife and wildlife habitats.

Community conservation has grown rapidly over the last 20 years and conservancies and community forests now cover 53% of all communal land in Namibia (Figure 1 n next page). By the end of 2015, there were 82 registered communal conservancies. These are mainly concentrated in the north-east and north-west regions of the country. Aggregate income to conservancies has grown concomitantly with conservancy numbers, to more than N$102 million in 2015. Of this, 53% was generated from non-consumptive tourism, 44% from consumptive wildlife use, and 2% from indigenous plant products.

The aim of community conservation is to safeguard the environment and promote the sustainable management of natural resources. This is achieved through programmes that use

→

Community conservation in Namibia:

- **Aims to align conservation outcomes with the socioeconomic needs of local communities**
- **Covers 53% of all communal land in Namibia**
- **Is generally underachieving on its objectives**

an event book monitoring system, game guard patrolling, annual game counts, vegetation monitoring and land use zonation plans. Conservancies have created large contiguous tracts of land that allow wildlife to move freely and to respond to changing climatic and environmental conditions. This was widely asserted to be responsible for the recovery of wildlife populations across the country from the early 1980s to the late 1990s.

However, numbers of many wildlife species have declined since then, more than might have been influenced by the recent drought, suggesting that the CBNRM conservation outcomes may have been modest at best. As populations continue to grow in the conservancies, wildlife populations could continue to decline. Evidence suggests that many of the conservancy management institutions, which have enjoyed strong support from NGOs in the past, have become weak. The data from the annual conservancy audit are conflicting in that most conservancies are rated highly in terms of law enforcement (i.e. focused patrolling and monitoring), yet the majority of conservancies are also rated very poorly in terms of their natural resource status and trends, which are measures of the sustainability and density of wildlife populations (Table 1).

In fact, not one conservancy was rated in the highest category in terms of natural resource trends or status. However, In 2015, the conservancies employed 5116 people and generated cash income and benefits worth a total of N$77 million. Overall returns from non-consumptive and consumptive use of wildlife were similar in 2015, indicating the importance of generating income from both tourism and hunting operations.

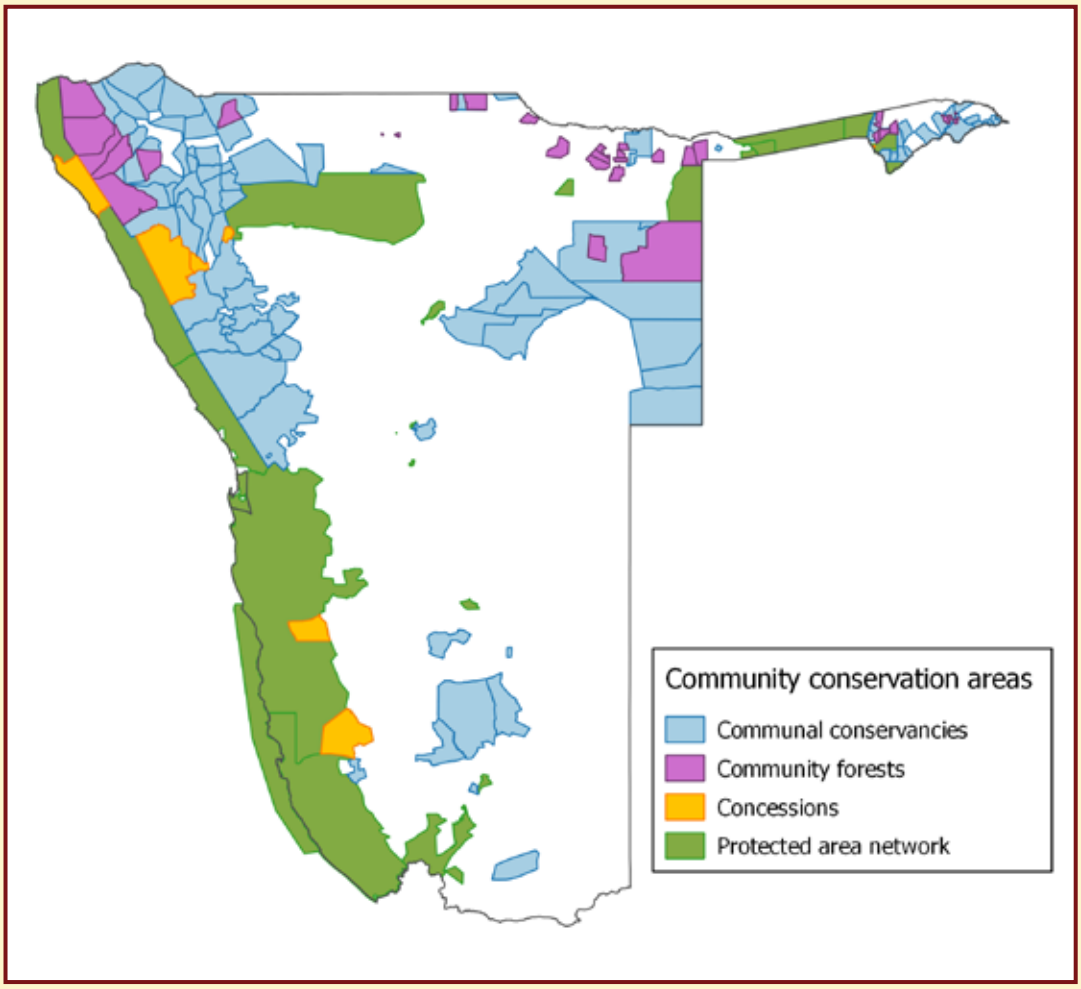


Figure 1: Proportion of different land use types on freehold land[1]

Level of rating	Natural resource trends	Natural resource status
0 - very weak	7%	28%
1 - weak	58%	39%
2 - fair	26%	24%
3 - good	9%	9%
4 - excellent	0%	0%

Table 1. The percentage of conservancies (n=76) within each rating level for natural resource trends (game population trends in the conservancy are showing sustainability) and natural resource status (current wildlife population levels are at or above density targets)[1]

However, significant differences exist in terms of earning power, with 17% of conservancies having earned no cash income in 2015 and only 26% earning upwards of N$1 million. The older conservancies accrue significantly higher benefits than newer conservancies, partly because the first conservancies were generally formed in the best locations for viable JV tourism operations, and partly because of the time that it takes to realise benefits.

Conservancies vary greatly in their characteristics, wildlife resources and tourism potential. As a result they differ significantly in their level of development, management and income.

Variability in income is at least partly linked to tourism potential (both non-consumptive and consumptive).

Of the 14 conservancies rated as exceptional in the last conservancy audit, 12 are located in the Zambezi Region with an average total benefit stream for the region in the order of N$2.3 million in 2016 – higher than any other region.

However, income is also linked to conservancy management, with lack of capacity, financial irregularities and management ineffectiveness being common problems.

COMMUNAL CONSERVANCES FACE VARIOUS CHALLENGES

The Community Based Natural Resource Managent (CBNRM) programme has not reached its full potential both in terms of conservation and development outcomes. This is largely due to institutional challenges such as elite capture of funds and a lack of capacity, resulting in weak conservation action and failure to reduce poaching, wildlife crime and human-wildlife conflict or deliver on expected benefits.

Institutional challenges

In order to become officially recognized by MET, conservancies must be gazetted, follow a conservation-focused mandate and establish a democratically elected committee to be re-elected every few years. While this democratic approach should help to ensure effective governance, the system is vulnerable to corruption.

A lack of capacity and the elite capture and misappropriation of funds have threatened the sustainability of conservation and development outcomes and have prevented ordinary conservancy members from obtaining appropriate shares of the benefits. This appears to have alienated conservancy members and sullied their views of conservation initiatives, reducing their co-operation with conservancy rules, ultimately threatening both conservation and development outcomes.

Poaching and wildlife crime

Poaching, carried out as a subsistence activity, a small-scale commercial activity or as part of a much larger organised crime operation, poses a significant threat to community conservation in Namibia. Subsistence-level poaching is highly variable and localised. Data have shown that this type of poaching has remained relatively stable over recent years. Meat distribution in conservancies has decreased over recent years because of the drought and this has likely led to increased poaching.

Organised groups of poachers remove large numbers of wildlife for sale as bush meat using vehicles. These groups operate fast and disappear quickly. Statistics on the levels or extent of this type of poaching in conservancies are limited. In addition, wildlife criminals target high-value animals or animal parts and smuggle them to overseas markets, mainly in Asia. In 2015 at least 110 rhinoceros and 49 elephants were killed for their horns and ivory. Lucrative payments are made to poachers and trackers, and the private returns are significantly higher than those received through cooperation with community conservation efforts.

Human-wildlife conflict

Unfortunately (and unsurprisingly), communities tend to hold the view that human-wildlife conflict (HWC) stems largely from conservation. This threatens co-operation required for the successful management of conservancies. While the total numbers of HWC incidents reported from conservancies has increased along with the number of conservancies, the average numbers of HWC incidents per conservancy (or per km2 of conservancy area) have remained relatively stable over time (Figure 2).

Nevertheless, there is considerable variability between conservancies – with some conservancies displaying an increasing trend in the number of incidents. The Human Wildlife Self-Reliance Scheme provides part-compensation for losses associated with HWC. However, as for any such compensation scheme, it cannot fully compensate these losses otherwise this will create perverse incentives.

Thus HWC remains a thorn in the side of conservancies. The Namibian Government is currently revising the HWC Policy with the aim of developing a more innovative and sustainable approach to mitigating HWC. It is believed that a better understanding of the drivers of HWC would help to direct effective action to ameliorate the problem. A recent review from South Africa suggests that the depletion of natural wildlife populations is one of the reasons for elevated livestock predation.

International and national regulations

External factors, such as changing international and national regulations also pose a challenge to community conservation in Namibia.

This includes the possibility of an international ban on the transportation and import of hunting trophies into the EU and a potential levy imposed by the Ministry of Lands and Resettlement on JV tourism lodges within conservancies.

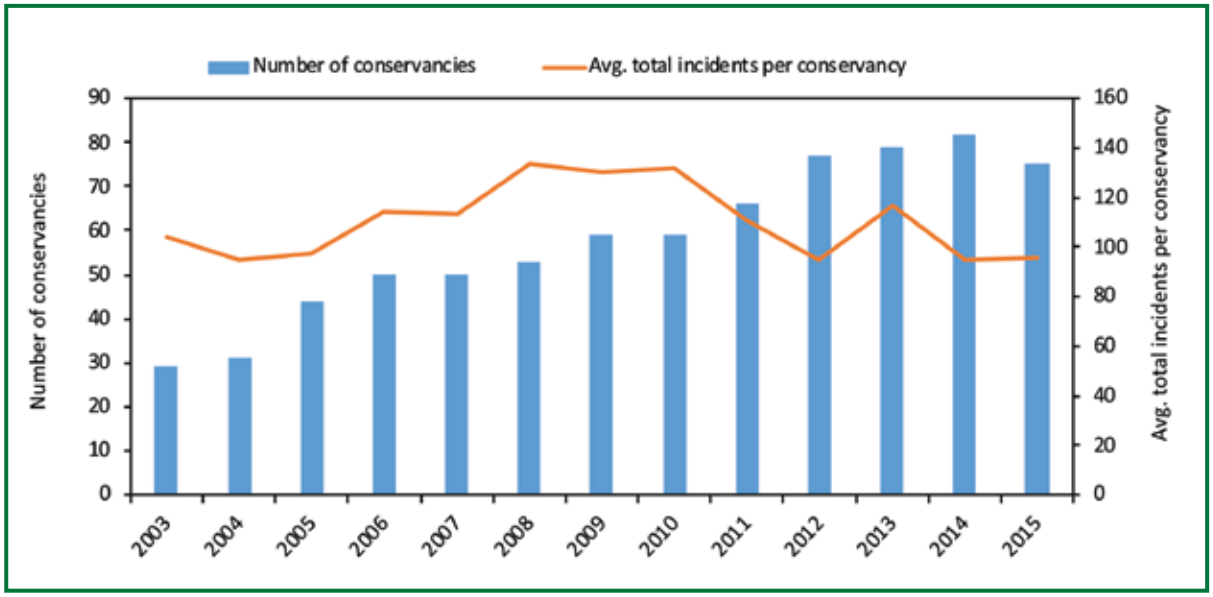


Figure 2. The number of registered conservancies and the average number of HWC incidents per conservancy from 2003-2015 (NACSO 2015)

PAYMENT FOR ECOSYSTEM SERVICES (PES) AN INNOVATIVE APPROACH

Payments for ecosystem services (PES) represent an innovative approach which constitutes both a financing mechanism and a financial incentive for conservation. PES systems allow those that benefit from environmental conservation to reward the landowners who deliver the desired outcomes, thus incentivising environmentally positive behaviour. A PES system aims to establish a market for the exchange of ecosystem services through payments that compensate landowners (in this case the conservancy members) for any losses they might incur in delivering the service, such as giving up rights to graze or collect resources in a defined area, and protecting the same area from other intruders. This is based on a voluntary, conditional agreement that takes place between the "sellers" of the service and at least one "buyer". To engage in this exchange, conservation actions and outcomes must be additional to what would have occurred without compensation and, as such, compensation should be conditional on these actions taking place.

Communal lands in Namibia provide a range of ecosystem services. While these services provide important benefits to local communities, they also provide significant benefits to Namibians and global society, particularly with regards to nature-based tourism and the existence value of biodiversity. Under a PES scheme, communities would be paid to give us some of their private benefits, and invest in protecting their biodiversity, in return for payment. The capital for these payments could be collected from international visitors to Namibia and/or from donor funds.

While the conservancies already generate income from tourism, they do not benefit from the global community's willingness to pay for the continued existence of wild nature, free roaming populations of charismatic species and for biodiversity in general. This amount could be far more substantial than the benefits derived from effectively mining the region's wildlife resources for short-term private gains. A system which succeeds in securing significant areas of wildlife habitat in good condition could not only generate income from PES but could also benefit from the spillover effects into the areas that are still available for wildlife utilisation for local livelihoods.

It is proposed that a PES scheme is set up to incentivise communities to do more to protect wildlife and wildlife habitat by discouraging encroachment into areas set aside for wildlife, burning, and excessive harvesting of natural resources. In a communal ownership situation, it would not be wise to enter into payments with households in the hope that they would co-operate by desisting from damaging activities and participate in collective policing action. Such a system would be undermined by free-riders, ultimately leading to a "tragedy of the commons" situation. However, the prior existence of an institutional set-up on the form of the conservancy management system provides an opportunity to invest a portion of these funds into increased conservation efforts (Figure 3).

This is potentially a win-win situation. Under the PES scheme, household share of income or the conservancy development share of income would increase, covering the costs associated with some loss in livelihood income due to increased conservation efforts. Increased income allocation to conservation measures would help to reduce HWC costs by improving natural food sources for problem predators.

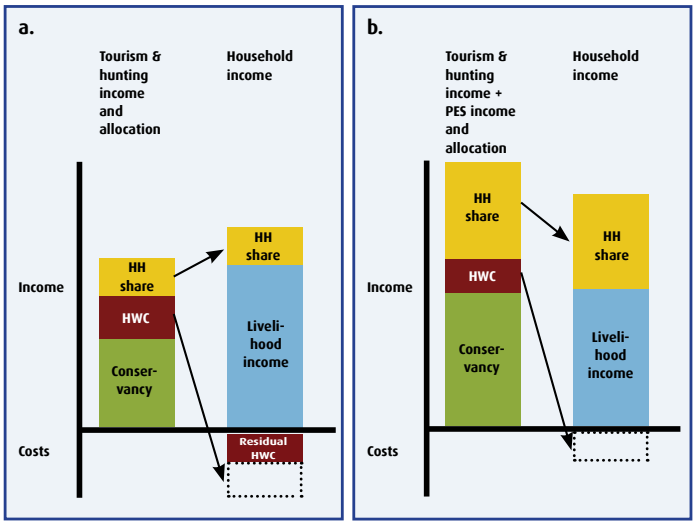


Figure 3. Example of a wildlife PES scheme in communal conservancies. The current situation with all tourism and hunting income is shown in (a) and the proposed PES in addition to JV income is shown in (b).

Thus the PES scheme can build on existing institutional structures of the CBNRM framework. The PES income can be pooled with the income generated by the JV partnerships and directed through the existing communal conservancy structures to be allocated between conservation management and community benefits. However, in order to ensure transparency and effective financial management, and in order to ensure that regulations are enforced, illegal activities are stopped and wildlife populations are healthy, it is likely that for the system to be a success, it will require the direct involvement of the NGO that administers the PES, to provide both financial and conservation management oversight of the conservancy operations as a whole. This is a major departure from the philosophy of community-based natural resource management.

The payment to each participating conservancy would be linked to wildlife status and rangeland condition, by assigning a score to each conservancy based on annual habitat assessments and wildlife censuses. The scoring system will take climate conditions (such as drought) into account and a simple computational system will be used to calculate each conservancy's reward, where payment is increasing with the conservancies' score in each category (wildlife, habitat and cleanliness). Part of the income derived from the PES would be allocated to conservation management as provided for in a conservation agreement and another part would be in the form of direct benefits to households, either in-kind (e.g. meat, maize, livestock) or cash.

Potential for PES in communal conservancies:

- **PES can reward biodiversity conservation irrespective of its potential for tourism**
- **It is conditional on delivery**
- **It can also be designed to allow for natural variation such as drought, thus helping to smooth incomes**

FIELD STUDY SHOWS THE PES PROGRAMME IS ACHIEVABLE

While designing a means of capturing global willingness to pay can be relatively straightforward, it is also important to design a system that is more effective than the current one, and which can deliver the services that are being paid for. This means consideration of the whole framework for the PES. Two important elements were considered - (a) the possibility of introducing oversight into what is currently a CB-NRM system, which by definition has no oversight, and (b) eliciting the true opportunity costs of the kind of co-operation required to deliver the ecosystem services being purchased, which provides an indication of the level of pricing required for the PES system. This study used a combination of behavioural, experimental and environmental economics research methods, namely framed field experiments and contingent valuation, as well as social survey methods to investigate these two pertinent issues.

The field study was carried out in Sorris Sorris, Uibasen-Twyfelfontein and Tsiseb conservancies, situated in the southern Kunene and northern Erongo regions (Figure 4). The area is an important tourist route for self-drive tourists and overland group tours. The main livelihood activity in the area is livestock husbandry (cattle, sheep and goats).

The conservancies have JV agreements with lodges, campsites and hunting operators. Uibasen is the only conservancy of the three that distributes a cash benefit directly to each household. Sorris Sorris and Tsiseb conservancies have been facing institutional challenges over recent years, which has resulted in a major breakdown in trust and management within the committees and in general throughout the conservancy membership.

Workshops were held with representatives from 188 households from nine villages, representing 19% of all households in the study area. A **framed field experiment** was conducted to examine how financial incentives and management oversight impact on cooperation. A game was played with participants taking part in one of two treatments where the level of external oversight varied and the level of the PES returns were varied.

The two treatments were labelled as *a certain PES* or an *uncertain PES*, where in the *uncertain PES* there is no external oversight and some of the money that is contributed to the public good could go missing. With the *certain PES* there is external oversight and the money being invested is guaranteed. The game was framed around the distribution of conservancy benefits. After the games were concluded, the

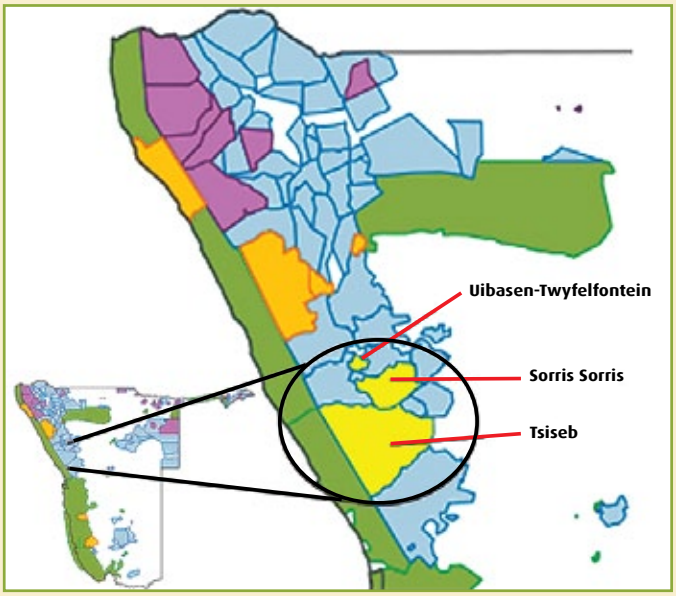


Figure 4. The location of the three conservancies that make up the study area (Sorris Sorris, Uibasen-Twyfelfontein and Tsiseb).

Under a PES scheme, communities would be paid to give customers some of their private benefits, and in return invest in the conservation of their biodiversity. Picture: Ralf Bäcker

participants were given a short survey on the socio-economic characteristics of their household as well as questions relating to conservancy management. The contingent valuation method was used to elicit the opportunity cost, by estimating the amount that households are willing to accept (WTA) as a payment in order to put up with greater levels of conservation management, which would effectively curb their damaging activities.

Key results: sample characteristics

Most respondents were between the ages of 18 and 50 and just over half had some secondary education. The overall average monthly household income, which included welfare grants, pensions, remittances and wage income was N$1181. Average income was higher in Uibasen than in Sorris Sorris and Tsiseb conservancies, with households earning on average about N$400 more per month.

Key results: The influence of oversight and price level on co-operation

The importance of financial safeguards emerged as a key finding from the experiments. More specifically, not only were contributions across all conservancies higher under the certain framing, but community members who were disillusioned with the management committee (over financial impropriety or ineffectual management) were more cooperative under the certain financial treatment (Figure 6). The implication was that explicit financial oversight would induce more cooperation – particularly among those community members who lack confidence in the conservancy committee.

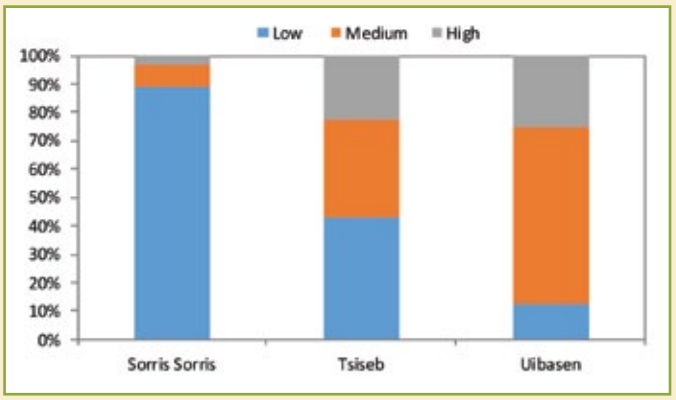
The level of financial reward also influenced cooperation. When low financial rewards were mixed with uncertainty this resulted in significantly lower levels of cooperation from participants with low levels of confidence in the ability of the management committee to effectively implement financial and management plans (Figure 7).

The results suggested that the level of the PES payment was less a determinant of cooperation under the certain framing. When the payment was certain, raising the level of the financial reward did not significantly improve contribution levels. The implication is that under these conditions, a lower payment level was sufficient to induce cooperation. Conversely, in an environment characterised by uncertainty (and perhaps mistrust), the level of the PES becomes more important.

Key results: Estimated household opportunity costs of service provision and aggregate levels of payments required under a PES programme

The mean willingness to accept payment in return for putting up with more effective wildlife conservation in the conservancies was estimated to be N$1122 per annum. WTA was about two to three times higher in Uibasen conservancy (where rewards are already higher) than in Sorris Sorris and Tsiseb conservancies. Overall, WTA was relatively low. This could be because (a) increasing wildlife protection (eliminating illegal activities) comes at little cost to the community, i.e. that outsiders could be responsible for the majority of poaching, or (b) because external oversight desired by community members seeking a less corrupt system and therefore are willing to accept low levels of compensation in order for this to be realised. This reaffirmed the results of the field experiments where we did not see a large effect of payment level on cooperation.

Based on stated WTA, if the three conservancies in the study area were to successfully achieve a high level of wildlife



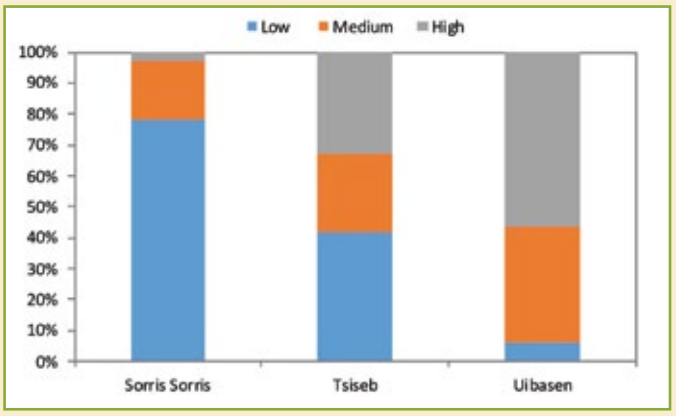


Figure 5. The percentage of respondents in each conservancy that have high, medium or low confidence shown in the top graph (a), and the ability of the conservancy management to manage conservancy finances, and in the bottom graph (b), to put into action the conservancy's management plan.

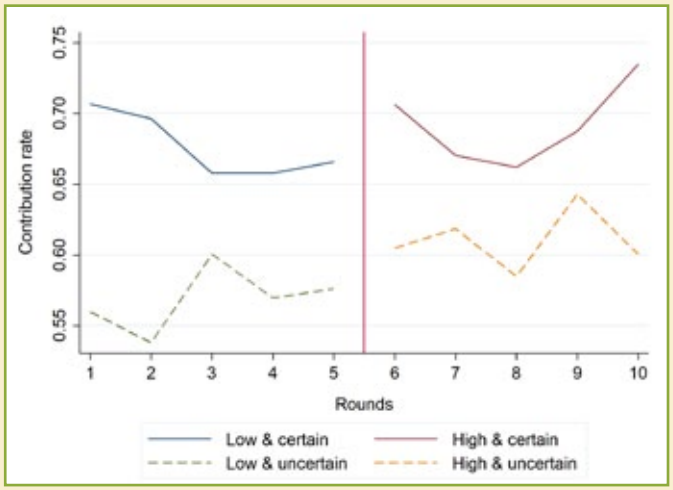


Figure 6, right. Mean contribution rates across the 10 rounds for the two treatments (level of PES and level of external oversight).

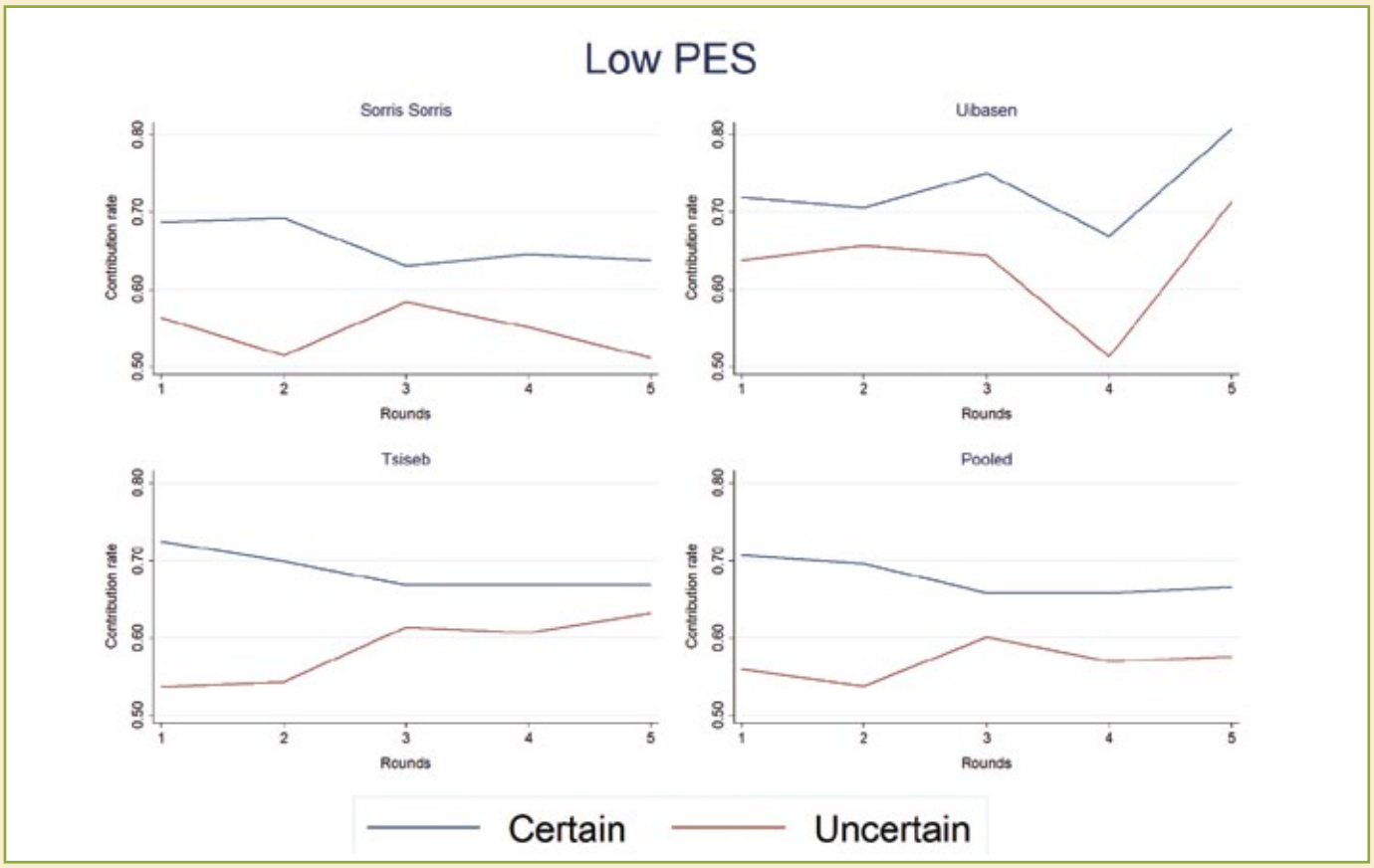


Figure 7. Mean contribution rates by confidence in the conservancy management (low, medium, high) for each treatment

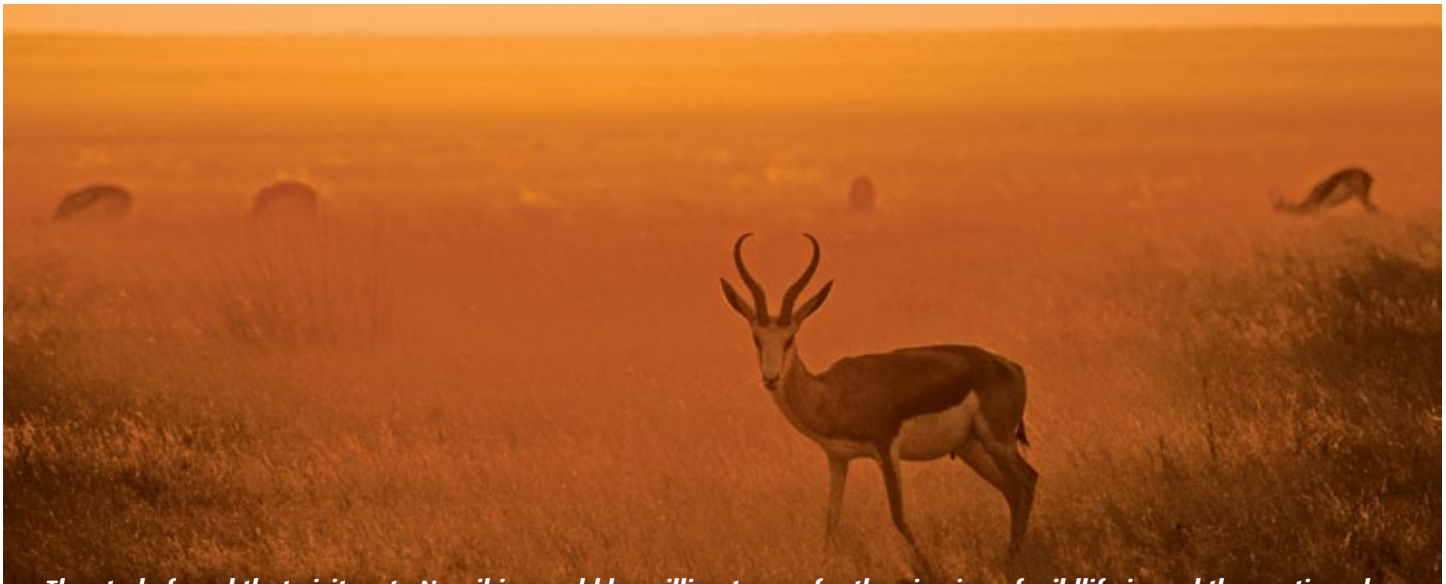
protection under a PES programme, the payments per year would be in the region of N$232 000 for Sorris Sorris, N$821 000 for Tsiseb, and N$56 000 for Uibasen. Using the lower and upper bound WTA estimates, the annual payment would range between N$778 000 and N$2.1 million for these three conservancies. These estimates suggest that the implementation of a PES programme at national scale would require about N$47 million (US$3.5 million) in addition to the funding required to improve conservation efforts. Thus a PES programme could be considered achievable.

Key results: Estimated public willingness to pay for conservation outside Protected Areas

In the interest of this study a question was posed to international and SADC visitors during a visitor survey that was being undertaken as part of Work Package 12, particularly in order to investigate how easy it would be to raise the funding required for a payment for ecosystem services programme. This was based on the premise that the proposed PES should be donor funded and supplemented with voluntary contributions from tourists visiting the country. The donor funding reflects global existence value and the fact that people/organisations want to donate to the conservation of wildlife and protection of unspoilt landscapes. Voluntary donations from tourists would be derived from their residual willingness to pay for viewing wildlife and their additional willingness to pay for its continued conservation.

Visitors were asked if they would support the proposal to charge all visitors to Namibia a once-off conservation fee on arrival in the country. A total of 76% of overseas and 71% of SADC respondents were in favour of this. Those visitors that said "no" felt that a voluntary donation would be more appropriate. A number of visitors also had concerns that the fee would be misused if collected on arrival at the border or at the airport, and many said that the involvement of a trustworthy NGO was an important factor. Amongst those who said that they would support the implementation of a once-off conservation fee, the average willingness to pay was N$190 (US$15) for overseas visitors and N$66 (US$5) for SADC visitors. If this was reduced to a nominal fee of US$10 and US$2.50, it would raise at least N$65 million (US$5 million) per year for conservation outside of Protected Areas.

Empirical evaluations of the impact of the CBNRM program are limited, with most evaluations focusing on generic community-level benefits and the conservation impacts at a regional or national level. While these analyses tend to demonstrate positive impacts as a result of the program, they do not adequately capture the effectiveness (or additionality) of the CBNRM program at bolstering localised wildlife conservation nor do they quantify the benefits delivered at the household level. While overall trends in wildlife numbers may have increased and illegal activities may have decreased across the country, there is significant variability across conservancies, particularly in terms of their natural resource sustainability, suggesting that CBNRM wildlife outcomes have been modest. It is likely that conservancy members have not had to give up much in order to benefit in some way from the CBNRM programme. However, the development outcomes have been highly variable across conservancies. Development



The study found that visitors to Namibia would be willing to pay for the viewing of wildlife in and the continued conservation of the communcal conservancies. Picture: Ralf Bäcker

outcomes are constrained by institutional challenges. The system is vulnerable to corruption and in many conservancies the decision-making processes and financial systems have been captured by small groups of well-connected individuals. This has caused instability and disillusionment amongst conservancy members and threatens conservation outcomes. In such instances conservancies are unable to adequately address wildlife crime, poaching and other illegal activities.

The national and international values generated by communal lands in Namibia are significantly higher than the values derived by local communities. As such, from a global perspective a PES programme is feasible and provides an opportunity for channelling income from other beneficiaries, such as international donors and local and international tourists. The findings from this study suggest that a PES programme has the ability to help address institutional challenges and household cooperation. The field study confirms that explicit financial and conservation oversight is desired by communities and increases the chance of their cooperation. The findings also show that the communities represented in this study would approve of such changes. The variability in development outcomes across conservancies cannot be addressed through tourism ventures alone, as not all conservancies have the same tourism potential and therefore such ventures will never achieve an even outcome across the communal landscape. However, a PES programme may be able to bridge this gap as payments are made when additionality is demonstrated against a baseline and is conditional on the performance of the conservancy in achieving conservancy specific outcomes relative to their natural baseline conditions. Furthermore, the contingent valuation analysis found that not only is the PES programme feasible from a willingness to accept perspective, but that the aggregate payments required under a PES programme are likely to be affordable. In addition, public willingness to pay for conservation is estimated to be higher than the aggregate level of payment required under the PES. This is a very promising outcome. However, costs of the extra level of conservation management (i.e. reinvestment into conservation efforts) that is necessary to ensure the effectiveness of the PES have yet to be calculated.

CONCLUSIONS:

- **A PES programme can help to address institutional challenges and household cooperation**
- **Explicit financial and conservation oversight is desired by communities**
- **A PES programme is feasible from a WTA perspective, and aggregate payments required are affordables**

This policy brief was prepared by :
Jane Turpie, Kerri Brick, Gwyneth Letley and Courtney McLaren.

The complete TEEB Study - Vol III can be found online at: www.resmob.org

Dr. Martin Nowack I GIZ Project Manager, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH I P.O. Box 24486 Windhoek, Namibia I T: +264 61 284 2733 I E: martin.nowack@giz.de

ResMob is a joint project of the Ministry of Environment and Tourism and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH commissioned by the German Federal Ministry for the Environmnent, Nature Conservation and Nuclear Safety. This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB) supports this initiative on the basis of a decision adopted by the German Bundestag.

Department of Environmental Affairs
MINISTRY OF ENVIRONMENT AND TOURISM

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
of the Federal Republic of Germany