CONSERVANCIES: INTEGRATING WILDLIFE LAND-USE OPTIONS INTO THE LIVELIHOOD, DEVELOPMENT, AND CONSERVATION STRATEGIES OF NAMIBIAN COMMUNITIES

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ABSTRACT

CONSERVANCIES: INTEGRATING WILDLIFE LAND-USE OPTIONS INTO THE LIVELIHOOD, DEVELOPMENT, AND CONSERVATION STRATEGIES OF NAMIBIAN COMMUNITIES

Namibia is a large, sparsely populated southern Africa country. Since its independence in 1990, the Government of the Republic of Namibia (GRN) has introduced an innovative conservancy formation strategy that has engaged more than 150,000 rural communal area residents in a national conservation movement. The passage of the conservancy legislation in 1996 has resulted with the registration of 29 communal conservancies, which encompass more than 74,000 km² of wildlife habitat. Seventeen of these conservancies are immediately adjacent to state protected areas, and cumulatively, increase the buffer and corridor areas around and between the existing protected areas by more than 42%. The groundswell of support for conservancies is being generated by an escalating flow of benefits that has doubled during three of the past four years, reaching more than US$1.1 million in 2002. The conservancy movement has markedly changed the attitudes of communal area residents, and communities are now integrating wildlife and tourism enterprises into their livelihood strategies. As a consequence, land-use patterns across Namibia's arid and semi-aird communal areas are changing towards more environmentally appropriate and sustainable forms of game production, which concomitantly, enhances the viability of Namibia's extensive protected area network. Though conservancies are already producing significant environmental, social and economic gains, it is believed that most of today's highly successful conservancies (i.e., the Nyae Nyae Conservancy) still have massive upside potential to increase income and benefits to their membership. However, in order to capitalize on such conservancies growing populations of rare and valuable game, there is a need to address veterinary concerns and restrictions that severely inhibit the ability of conservancies north of Namibia's veterinary "Red Line" to market their valuable game resources, and to alter the paradigm of government decision-makers who largely view subsistence agriculture as more appropriate forms of land-use than wildlife and tourism production.

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1.0 INTRODUCTION:

Namibia is a large country (823,988 km²) located in southwestern Africa, where it is bordered by Angola and Zambia to the north, Botswana to the east, South Africa to the south, and the Atlantic Ocean in the west. Namibia acquired its independence from South Africa in 1990, but in a short period of time has put in place a remarkably innovative and effective community conservation movement.

The population of 1,826,854 (Census Office, 2002) is largely rural based, with more than 65% of the population living on communally owned lands – which is one of three predominant land tenures. Roughly 6,100 private farms (Barnard, 1998) occupy 44% of the land mass; communal lands encompass an additional 42% of the country; and a network of 21 protected areas covers the remaining 14% of the land.

The climate ranges from hyper-arid in the west, where portions of the Namib Desert receive average rainfalls of less than 25 mm/year, to subhumid in the Caprivi Region, which averages 600-700 mm/year of precipitation (Barnard, 1998). Rainfall distribution provides a foundation for three main vegetation zones (i.e., deserts, savannas, and woodlands), which in-turn, have been classified into fourteen distinct vegetation types (Giess, 1970).

Traditionally, Namibian communal area residents have been heavily dependent upon subsistence agricultural (crop and livestock) activities to support daily livelihood needs. However, there is growing recognition of the unsuitability of much of Namibia for arable crop or sustainable livestock production, and the Namibia Ministry of Environment & Tourism (MET) has initiated a national conservancy movement that seeks to promote and integrate

(where appropriate) wildlife production and tourism development efforts into the welfare and livelihoods of many communal area residents. Additionally, it is becoming increasingly evident that the formation of communal area conservancies adjacent to protected area systems (i.e., parks and reserves) is enhancing the viability of the protected area system by vastly increasing and/or maintaining large tracts of habitat that are required by wildlife during periods of drought or poor rainfall distribution that frequent Namibia's arid landscapes.

Though impressive returns are being realized, the financial viability of most registered and emerging conservancies remains marginalized due to their location within Namibia's designated veterinary restriction zone, where such diseases as Foot and Mouth Disease, bovine pleural pneumonia, corridors disease, tuberculosis, and bovine malignant catarrhal fever still remain health threats and potential compromises to Namibia's livestock export markets. The resultant veterinary restrictions make it difficult for such conservancies to fully capitalize on the presence of recovering populations of high value wildlife species such as roan antelope, sable, and disease-free buffalo, as well as burgeoning populations of common plains game species (i.e., springbok, oryx, eland, etc.) that have viable market values within Namibia or the broader southern Africa region. Until innovative mechanisms are found to mitigate the risks of these infectious diseases and/or their associated regulatory controls, the wildlife industry in communal area conservancies cannot be positioned to optimize its potential and will remain at competitive disadvantage to a livestock industry that has been highly subsidized through years of government support and artificially inspired international export markets. Alternatively, should mechanisms be invoked, it is predictable that the integration of wildlife and tourism activities into the livelihoods of rural Namibian residents will continue, and will in the process, be promoted as legitimate, competitive landuses comparable with or advantageous to agriculture in Namibia's arid in semi-arid and arid ecosystems.

2.0 CONSERVATION POLICY SETTING:

Namibia is renowned for its vast wilderness settings and rich wildlife populations. However, prior to 1970 national wildlife populations were on a downward trend, and it was not until 1968, when freehold farmers were given limited rights of proprietorship over wildlife, that commercial farmers acquired incentives to manage their wildlife for gain. In 1975, these rights were reinforced through the passage of the Nature Conservation Ordinance of 1975, and since then wildlife numbers on commercial farmlands have increased by more than 80% (Barnes and de Jager, 1996).

In contrast to the freehold situation, wildlife population trends on most of Namibia's communal lands continued to decline until the mid- 1990s. Then, in an effort to emulate a similar recovery of wildlife populations on Namibia's communal lands, the MET approved a policy entitled "Wildlife Management, Utilisation and Tourism In Communal Areas" (MET, 1995) that was aimed at creating equitable rights to wildlife between freehold and communal area residents. Shortly thereafter, the Government of Namibia passed legislation that established the legal rights of communal area residents to benefit from wildlife once they had registered as a communal area conservancy (Government of Republic of Namibia, 1996).

3.0 IMPACTS OF COMMUNAL CONSERVANCY LEGISLATION:

The passage and implementation of the communal conservancy legislation has stimulated a conservation movement that is unprecedented in Namibia, or perhaps, elsewhere in Africa. In 1998, the first four communal area conservancies were registered, followed by five additional conservancies in 1999. Six more conservancies were then approved in 2000/2001. Thereafter, and following a pause in 2002 when no conservancies were approved, 14 additional have

already been registered in 2003, bringing the total number of communal area conservancies to 29 (Fig 1).

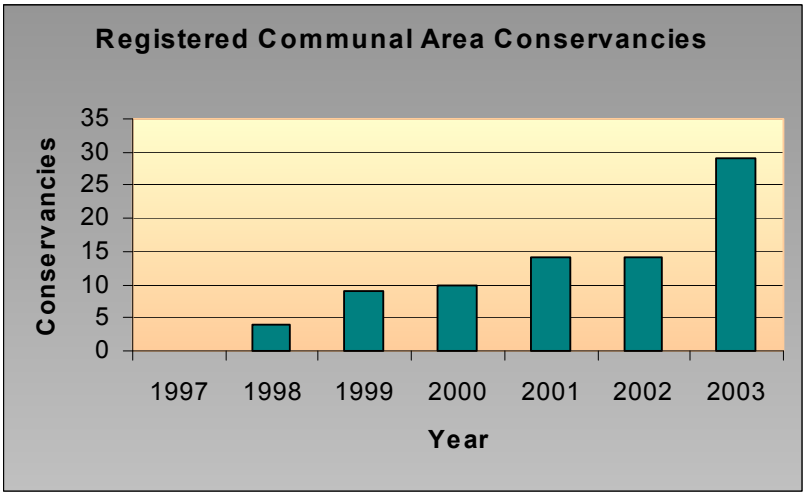

Figure 1. Cumulative number of communal area conservancies registered by year since 1997.

The communal conservancies are proving to be highly complementary to Namibia's 114,080 km² protected area network. The 29 registered conservancies encompass an additional 74,052 km² (Figure 2), and it is significant that 17 of these 29 conservancies are located immediately adjacent to national protected areas or in strategic wildlife movement corridors between such protected areas (Figure 3). These 17 conservancies place an additional 47,515 km² of land adjacent to protected areas under compatible conservation management, thereby bolstering the protected network system by 42%. The increased conservation land base provides opportunity for wildlife to move seasonally between parks and communal areas and

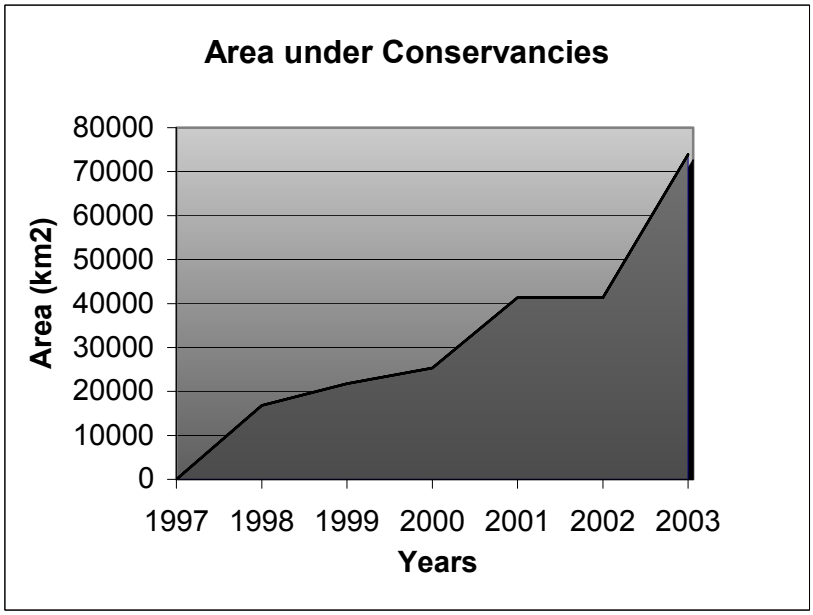

Figure 2. Cumulative area registered under communal conservancies by year since 1997.

this additional land base is of particular significance in times of drought or when poorly distributed rainfall force wildlife to move out of protected areas in search of forage or water.

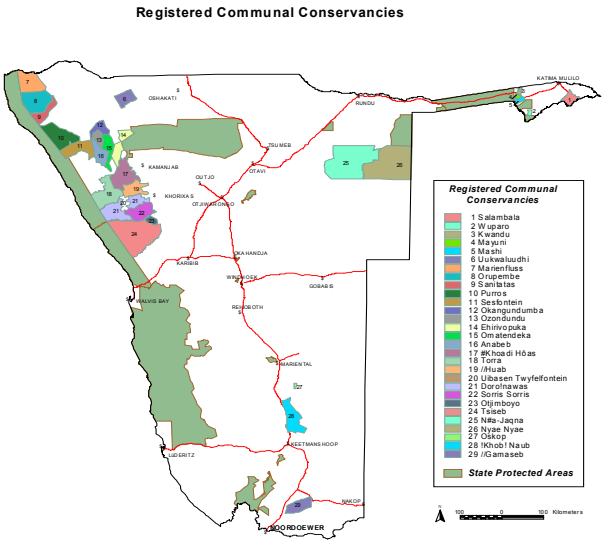

Figure 3. Registered and emerging communal are conservancies in relation to protected areas (Source: MET Directorate of Environmental Affairs, August, 2003).

The conservancy legislation has catalyzed a fundamental shift in the attitudes of rural community members towards wildlife. Prior to passage of this empowering legislation, wildlife was deeply resented, as it competed with livestock for grazing and water, preyed on livestock, and many species (particularly elephant) routinely damaged crops and infrastructure. Given the hardships wildlife imposed on communities, there was little community support for these "State Assets" and wildlife was routinely and widely poached. In contrast, by August, 2003, there were a documented 38,000 registered conservancy members (adults over 18 years of age), representing more than 150,000 communal area residents, engaged in conservation activities through communal conservancies (MET, 2003). Thus, the mindset and attitude of many of Namibia's communal area residents have drastically shifted, whereby today wildlife is viewed as a community asset in contrast to a community liability.

The positive community attitude has had a marked impact on the recovery of wildlife populations. Northwest Namibia provides a striking example. In the early 1980s, following two decades of heavy poaching and a major drought, wildlife populations in this rugged, 50,000 km² remote corner of Namibia were at a historical low with population estimates for such species as springbok, oryx, and Hartmann's zebra being less than 1000 animals each (Gibson, 2001). Shortly thereafter, Namibia's fledgling Community Based Natural Resource Management (CBNRM) Programme was introduced in the form of Community Game Guards through the NGO, Integrated Rural Development & Nature Conservation (IRDNC). This community initiative, which eventually led to the conservancy programme, was highly successful in the reduction of poaching and creation of community stewardship over the remnant wildlife resources. As a consequence, wildlife populations slowly began to recover, paving the way for today's burgeoning populations that are believed to include more than 100,000 springbok, 35,000 oryx, and 14,000 Hartmann's zebra. The trends (Figure 4) of

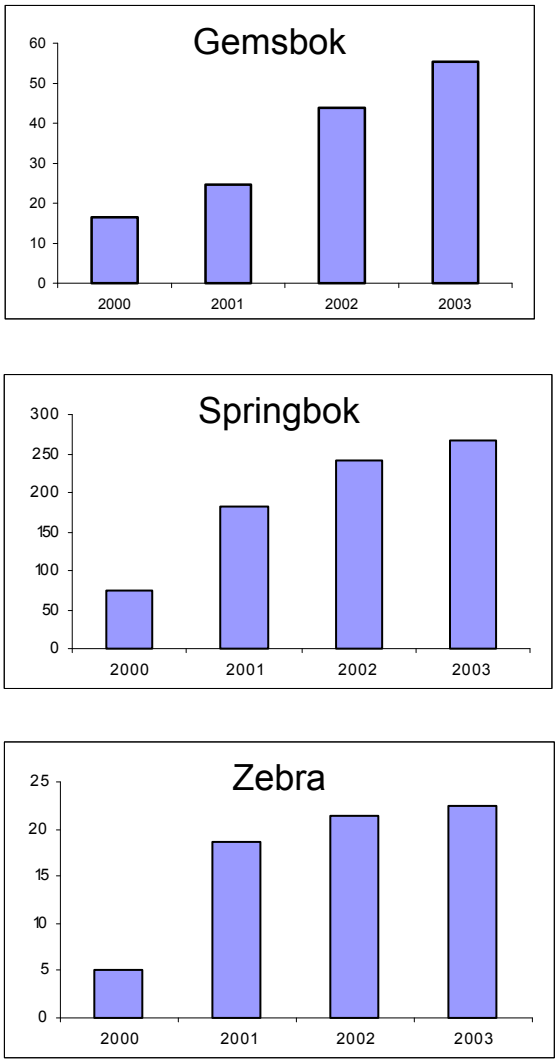

Figure 4. Population trends for gemsbok, springbok, and Hartmann's zebra in NW Namibia from 2000 through 2003 based upon animals observed per 100 kms driven (Source: MET/WWF/NACSO, 2003)

these growing populations have been documented over the past four years by annual road count censuses which entail analyses of the number of animals observed per 100 kms driven over more than 6,000 kms of transect routes annually undertaken (MET/WWF/NACSO, 2003).

The recovering wildlife populations are now being translated into tangible benefits for conservancies and their members. Since passage of the 1996 conservancy legislation, the Namibia National CBNRM Programme has noted a rapid increase in the flow of benefits to conservancies and their members (WWF-LIFE Programme, 2002). As illustrated in Figure 5 benefits to Namibia's CBNRM participants have almost doubled during three out of the last four years, with documented benefits in 2002 exceeding N$11,100,000 (US$1,100,000).

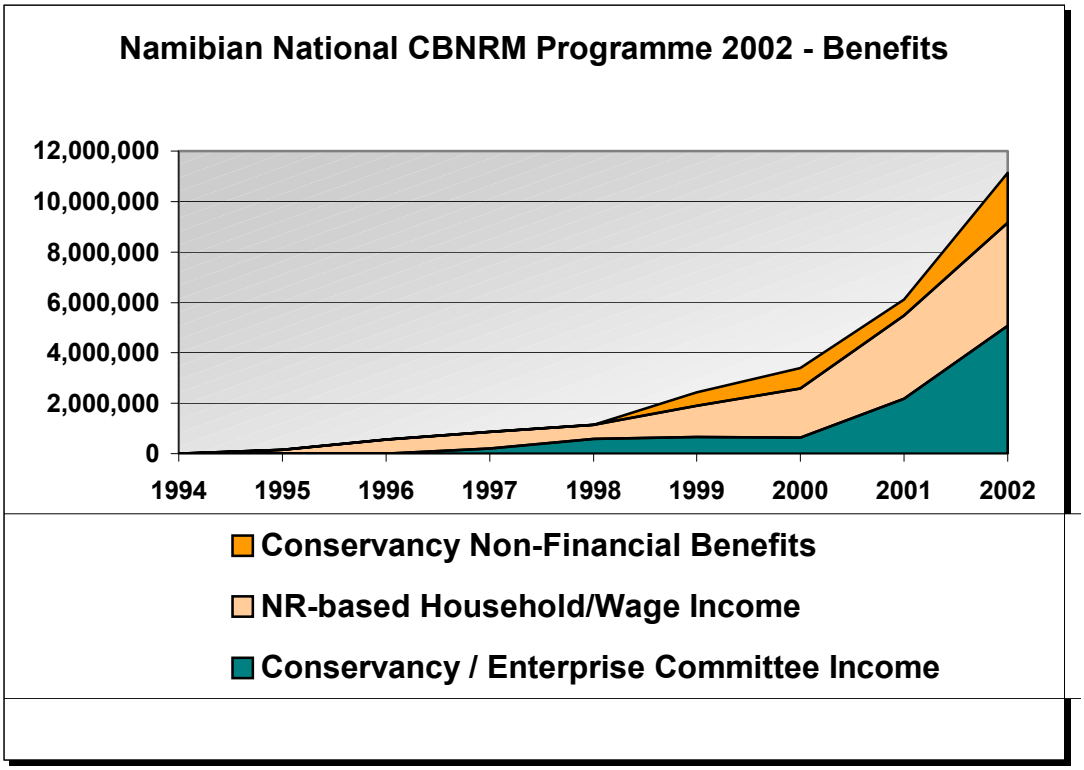

Figure 5. Benefits generated by the Namibia National CBNRM Programme from 1994 through 2002 (N$10 = approximately US$1 during October, 2002).

4.0 CONSERVANCIES AND THEIR IMPLICATIONS TO TRADITIONAL LAND-USES:

The communal conservancy programme has sparked a grassroots movement by rural communities to integrate wildlife production activities into their livelihood strategies. In many instances, large tracts of conservancy lands have been zoned exclusively for wildlife and tourism production purposes. A number of studies (Ashely, et.al., 1994; Ashley and LaFranchi, 1997; WILD Project, 2003, Diggle, 2003) have found that wildlife and tourism enterprises have substantial potential to complement and bolster the livelihoods of rural Namibian communities. Barnes and Humavindu (2003), in a recent assessment of the Goddwana Canon Nature Reserve, found wildlife production and related tourism enterprises to not only generate greater revenues per hectare and higher levels of employment than agriculture on neighboring farms, but also point out the significantly more ecologically friendly and sustainable management influences the wildlife/tourism enterprises have on Namibia's arid and semi-annual ecosystems.

Though the viability of CBNRM in Namibia has been well documented, the communal conservancy movement is not being driven by studies. In contrast, the driving force is its benefactors -- the rural community members who are actually reaping the financial, social, and economic benefits of integrating wildlife into their livelihood planning and management practices. Thus far, the success of the conservancy movement is such that nearly 1 out of every 12 Namibians is resident to a registered or emerging communal conservancy, and conservancy development is widely promoted in the latest Namibia National Development Plan (NDP II, 2002).

4.1 Nyae Nyae Conservancy and Kaudom National Park – A Case Study:

The creation of communal conservancies has generated significant benefits to many rural communities, but the potential for conservancies and neighboring parks to effectively produce, co-manage and market their joint natural resources has only begun to be tapped. An illustrative example is the Nyae Nyae Conservancy, which was Namibia's first communal conservancy, being registered on February 16, 1998 (Government Republic of Namibia, 1998), and the adjoining Kaudom National Park. This area is located in northeastern Namibia, where it borders with Botswana to the east, communal lands to the west and north, and to the south, a veterinary quarantine "Red Line" fence established by the Ministry of Agriculture, Water, and Rural Development (MAWRD) to prevent movement of potential disease-harboring animals (wildlife and livestock) into Namibia's recognized livestock export zone (Figure 6).

Nyae Nyae is the second largest conservancy in Namibia and encompasses approximately 9,030 km^2 of Kalahari woodlands, and when combined with Kaudom Park's 3,842 km^2, this joint park/conservancy incorporates almost 13,000 km^2 of wilderness wildlife habitat. The area receives approximately 400-450 mm of rainfall per year, and it is estimated that more than 2,000 elephant move freely between the Kaudom National Park, the Nyae Nyae Conservancy, and neighboring communal lands. The area is home to Namibia's largest population of roan antelope, and also provides habitat to other common game species such as blue wildebeest, oryx, kudu, red hartebeest, eland, tsessebe, springbok, giraffe, duiker, and steenbok. Predators include a sparse population of lion and cheetah, but healthy numbers of leopard, spotted hyena, and wild dogs. In addition to the above, the Nyae Nyae Conservancy also contains a potentially very valuable herd of 74 disease-free buffalo that has been confined to a small 2,500 hectare compound due to veterinary health restrictions.

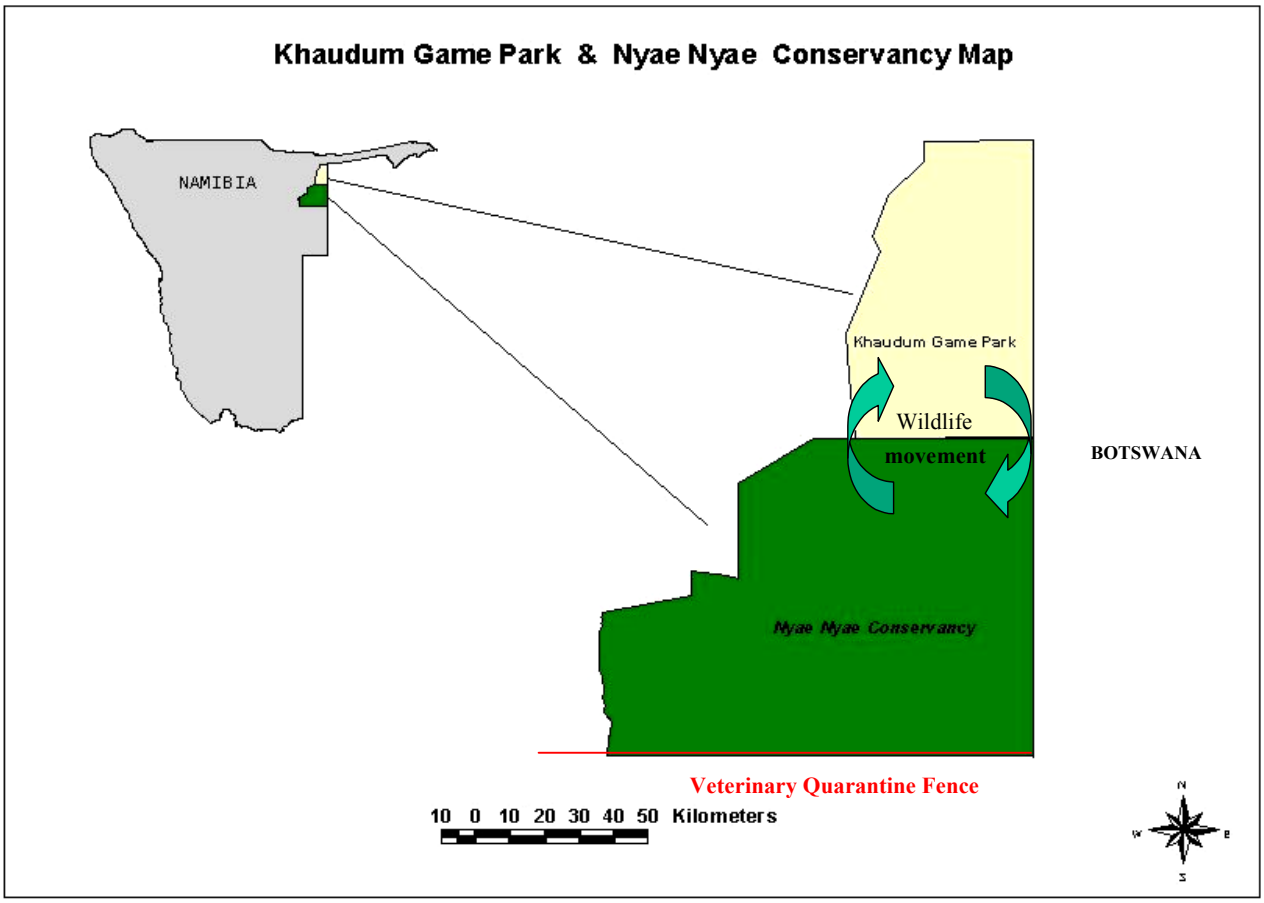

Figure 6. Map of Nyae Nyae Conservancy and Kaudom National Park.

The Nyae Nyae Conservancy was founded by one of Namibia's most marginalized ethnic groups, the Ju/'hoansi San (formerly known as Bushman). The conservancy (excluding the district settlement of Tsumkwe) has 770 adult members, which represent a total population of approximately 1,800-2,000 San people (Berger, #Oma, /Honeb, and Viall, 2003).

The Ju/'hoansi San are a society in transition. Historically, the Ju/'hoansi were a skilled, hunter-gather society that moved seasonally over vast distances between Botswana and Namibia. However, the area now inhabited by the Ju/'hoansi is roughly one-tenth of the 35,000 square miles (90,688 km²) that an estimated 1,200 Ju/'hoansi occupied as recently as

1950 (Nyae Nyae Development Foundation, 2002). This reduction in landbase, combined with the loss of traditional hunter/gatherer skills in the younger generation of Ju/'hoansi, is increasingly forcing the Ju/'hoansi to adapt to western societal norms. However, the remoteness of the area and the challenges of developing an effective, culturally-adaptive educational system for the San have yet to counter the Ju/'Hoansi's extremely low levels of literacy and employment. Furthermore, efforts to introduce the traditional hunter/gatherer Ju/'hoansi to sedentary agricultural activities (i.e., livestock and crop production) have had limited success (Berger, et.al., 2003), and such activities are further constrained by the conflicts these activities face with local predator and expanding elephant populations.

Since 1993, the Living In A Finite Environment (LIFE)[3] Project has assisted the Nyae Nyae Development Foundation to support the Ju/'Hoansi San through a grant to bolster the Nyae Nyae Conservancy's ability to sustainably manage and benefit from its natural resources. A key aspect of this grant has been to assist the Ju/'Hoansi to rebuild their wildlife populations from historical low levels in the early to mid-1990s back to numbers that can contribute to the Ju/'hoansi's welfare through benefits generated from trophy hunting, tourism, sustainable game meat harvesting, and potentially, game farming of high-value species such as roan antelope or buffalo.

LIFE Project support to the Ju/'Hoansi has come in a number of forms, including: assistance in mobilizing the Ju/'Hoansi into a conservancy; conservancy land-use zoning around different land-uses (i.e., wildlife, integrated livestock, village areas, etc.); development and maintenance of game watering points; re-introduction of game to bolster the recovery rate and financial

[3] The LIFE Project is jointly funded by the United States Agency for International Development (USAID), the Ministry of Environment & Tourism, and the World Wildlife Fund (WWF), and administered by the WWF on behalf of the Namibia National CBNRM Programme.

viability of the conservancy; support to the valuable disease-free buffalo herd; marketing and negotiation of trophy hunting concessions; and capacity-building of the Nyae Nyae Conservancy committee to manage the above activities.

4.1.1 Programmatic Impacts on The Nyae Nyae Conservancy and Kaudom National Park Wildlife Populations:

The Nyae Nyae Conservancy and Kaudom National Park form one contiguous management system for wildlife, with many species of game moving freely between the southern portions of Park and the Nyae Nyae Conservancy on a seasonal basis (see Figure 6). Given the 13,000 km² size of this combined area, the censuses' small sampling sizes of 10-20%, and sparse game densities, the population estimates obtained by these censuses (Table 1) have low levels of accuracy and the findings vary considerably between the two surveys (Stander, 1995; Craig, 1998). Nonetheless, it is clear that the estimated populations are extremely low for such a vast area.

Table 1. Estimated Populations of The Nyae Nyae Conservancy and Kaudom National Park, Based Upon Ministry of Environment & Tourism Aerial Censuses In 1995 (Stander) and 1998 (Craig).

Species	1995 MET Census		1998 MET Census	
	Nyae Nyae	Kaudom NP	Nyae Nyae	Kaudom NP
Buffalo (*Syncerus caffer)*	30	-	33	0
Eland (*Taurotragus oryx)*	0	0	12	0
Elephant (*Loxodonta Africana)*	302	783	552	2224
Oryx (*Orys gazella)*	110	152	429	59
Giraffe (*Giraffa camelopardalis)*	6	223	47	259
Red hartebeest (*Alcephalus busephalus)*	31	4	18	0
Kudu (*Tragelaphus strepsiceros)*	249	133	283	157
Ostrich (*Struthio camelus)*	190	26	311	29
Roan (*Hippotragus equinus)*	123	75	0	66
Springbok (*Antidorcas marsupialis)*	0	-	0	0
Warthog (*Phacochoerus aethiopicus)*	0	0	160	0
Blue Wildebeest (*Connochaetes taurinus)*	164	51	204	145

Over the past four years the LIFE Project has worked closely with the Nyae Nyae Conservancy, MET and private sector partners to bolster the existing game populations through a series of game translocations. From 1999 through July, 2003, a total of 1,827 game animals, composed of 541 red hartebeest, 274 oryx, 86 blue wildebeest, 390 springbok, 233 eland, and 303 kudu were introduced to the Nyae Nyae Conservancy; while an additional 300 springbok and 30 blue wildebeest are scheduled to be introduced in August, 2003 (Table 2).

Table 2. Estimated Game Populations for Potential Meat-Producing Animals In The Nyae Nyae Conservancy, Based Upon: The MET 1998 Game Census, Game Introductions To Nyae Nyae Conservancy 1999-2003, and Extrapolated Growth Rates By Species.

Species	1998 Met Game Census	Game Introductions					Total Animals Introduced	Est. % Ann. Growth	Total Estimated Animals 2003
		1999	2000	2001	2002	2003			
Red Hartebeest	18	42	43	230	226	0	541	15	727
Oryx	429	48	81	48	97	0	274	15	1171
Blue Wildebeest	204	33	0	0	53	30	116	15	548
Springbok	0	89	92	0	209	300[4]	690	20	880
Eland	12	0	83	0	0	150	233	15	268
Kudu	283	0	215	0	88	0	303	15	947
Elephant	558	-	-	-	-	-	-	7	733
Totals	**1,504**	**212**	**514**	**278**	**673**	**480**	**2,157**		**5,274**

The purposes of these introductions are manyfold: to increase the Nyae Nyae game populations, thereby allowing a larger and more diverse offtake of trophy animals; to increase the density of game in key areas of the conservancy, and in the general Nyae Nyae/Kaudom ecosystem, so that tourism becomes a more attractive and viable development option; and to increase the number of meat producing species of game so that sustainable harvesting of game can commence to supplement the protein diets of the Ju/'Hoansi residents of the conservancy.

[4] The springbok and blue wildebeest to be translocated during 2003 had yet to be translocated at the time this paper was written.

An additional intent is to increase the number of "buffer" species of game in the area (i.e., springbok, kudu, and oryx) so that predation pressure on more valuable species such as roan antelope and eland is reduced, thereby promoting the recovery of these species as well.

The decline of wildlife populations in the Nyae Nyae/Kaudom area during the 1980-95 period is believed to be resultant of a number of interacting factors. The construction of veterinary fences along the eastern and southern boundaries of this area (i.e., Botswana/Namibia border and Namibia veterinary quarantine fence, respectively) has fragmented the historical migration routes of wildlife across the broader Kalahari ecosystem. Concomitantly, the situation has been exacerbated by the settlement of the Ju/'Hoansi people on waterpoints in the 1980s and the arising conflict between people and wildlife over access to water. Lastly, uncontrolled hunting has taken a toll on such species as giraffe.

As a consequence of the above factors, it was necessary to coincide the game introduction effort with a complementary joint MET/Conservancy water development programme to establish and maintain wildlife water points in the Nyae Nyae Conservancy. Consequently, there are now 14 dedicated game water points in the conservancy, which is a sharp contrast to the less than five that were operational in the mid-1990s. Similarly, extensive awareness-creation and capacity-building efforts have been instigated to involve the Ju/'Hoansi people in the management of the Conservancy's wildlife and to keep game waterpoints free of settlement.

The combined efforts of the game translocations and water development programme have begun to generate substantial returns to the Nyae Nyae Conservancy. Though not confirmed by an additional aerial census, wildlife populations in the broader Nyae Nyae Conservancy/Kaudom Park have increased noticeably since 1998 (Alberts, 2003). Further, the frequent observation

of introduced (eartagged) game in the Kaudom National Park demonstrates the interconnectivity of Nyae Nyae and the Kaudom, and the value of the Nyae Nyae game introductions to the Park as well. An extrapolation of the population growth rates of the estimated 1998 game populations, combined with the introduced game at conservative annual recruitment rates (ranging from 7%-20%/year by species), reflects what is believed to be a robustly recovering game population (Table 2).

4.1.2 Impacts of The Recovering Wildlife Populations on The Livelihoods of The Nyae Nyae Conservancy Members:

The Ju/'Hoansi San are one of Namibia's most poverty-stricken and marginalized communities. A recent survey (Wiessner, 2003) of 32 Nyae Nyae settlements (out of 33) found non-conservancy related employment and income to be as follows: 46 community members receive monthly government pension payments of N$250/month; 70 people are employed, in descending order, by government (47), a mining company (12), and a mix of the local church/health clinic/tourism lodge (11); and the total identified non-conservancy income (between pensions and employment) amounts to approximately N$995,244 for 2003. In addition, Wiessner found: 12 people receive a total of N$82,200/year through employment with the Nyae Nyae Conservancy and associated professional hunter; the local church pays Ju/'Hoansi handicraft makers an additional income of N$240,000-300,000/year; tourism contributes N$60,000/year; and Devils Claw sales generate approximately N$10,000/year. Thus, the Wiessner study indicates cash income to the residents of the Nyae Nyae Conservancy in 2003 will amount to approximately N$1,387,444 to N$1,447,444, or a paltry pro-rated per capita annual income of N$694 – N$724 for the area's 2,000 Ju/'Hoansi residents.

However, the Wiessner survey does not capture the full extent of the Nyae Nyae Conservancy's contributions, as the survey did not include Baraka (the Nyae Nyae Conservancy headquarters) where many conservancy staff reside, nor did it fully identify the number of people employed through the trophy hunting operation. Furthermore, the financial contribution of the 2002/03 Nyae Nyae Conservancy benefits distribution is not included in the study. From December, 2002 – February, 2003 each of the Conservancy's 770 members received a cash distribution of N$620 (/Honeb, 2003), which cumulatively injected an additional N$477,672 of cash directly into the pockets of the conservancy members. Thus, if these contributions are added to Wiessner's data, it can be seen that the benefits generated by the Nyae Nyae Conservancy are starting to play a major role in the livelihoods of the Ju/'Hoansi people (Table 3). Based upon this information, the Nyae Nyae Conservancy is directly providing 28% of the jobs in the conservancy and approximately 35% of the cash income of conservancy members in 2003. It can be further argued that the conservancy's natural resource management and support framework also strongly enhances handicraft and tourism revenues, meaning that as much as N$1,073,100 (or more than 50%) of the cash income received by the Nyae Nyae Conservancy residents in 2003 will be conservancy related.

Based upon the these figures the anticipated 2003 per capita income for Nyae Nyae's 2,000 community residents amounts to N$1,039/year, of which the Conservancy can claim either full or partial responsibility for approximately N$537. In addition, the above figures do not take into consideration the livelihood benefits derived from game meat consumed by conservancy members, nor the support the conservancy provides towards maintenance of village and wildlife water points, and thus, still do not yet fully recognize the conservancy's livelihood contributions.

Table 3. Cash Incomes of Ju/'Hoansi Residents of The Nyae Nyae Conservancy During 2002 and 2003.

Source	Wiessner Data			Wiessner & NNC Records		
	No. Pensioners	No. Jobs	Income	No. Pensioners	No. Jobs	Income
Pensions	46		138,000	46		138,000
Government		47	709,764		47	709,764
Mining		12	60,480		12	60,480
Church/lodge/clinic		11	87,000		11	87,000
Handicrafts sales			240,000-300,000			240,000-300,000
Tourism			60,000			60,000
Devils Claw sales			10,000			10,000
Conservancy/Hunter		12	82,200		27	235,428
Conservancy Cash Benefits Distribution						477,672[5]
Totals	**46**	**82**	**1,387,444 –1,447,444**	**46**	**97**	**2,018,344 –2,078,344**

As demonstrated above, the recovering wildlife populations have begun to reap meaningful dividends for the Nyae Nyae Conservancy. The increased populations have been translated into a much larger and diverse trophy hunting quota from the Ministry of Environment & Tourism. In 1998, the Nyae Nyae Conservancy received an initial, small trophy hunting quota of 10 animals, composed of five different species. However, the latest quota (2002/2003) reflects the MET's recognition of the recovering wildlife populations and includes 53 animals from 12 species (Table 4).

The increased quota, combined with a refined tendering process for the Nyae Nyae concession, has had a significant impact on the trophy hunting income. Nyae Nyae's first concession period (1998-99) generated US$17,850/year, while the concession fee increased to US$42,900/year during the second concession period (2000-2001). In contrast, the revised and more generous

[5] The benefits distribution of N$477,672 was premised upon accumulated trophy hunting revenues from the 2000, 2001, and 2002 hunting seasons and does not reflect an annually viable sum of money available for distribution. Based upon the hunting revenues received in 2002 of N$845,697, an amount of N$414 per member, or a total of N$318,828 was allocated to the benefits distribution. This sum was added to funds available from 2000 (N$82,940) and 2001 (N$75,904) to arrive at the total distribution of N$477,672.

2002-2003 quota has resulted with a 2002 payment of US$92,050 (N$845,697) going to the conservancy. As mentioned earlier, portions of these funds have added considerably to the livelihoods and welfare of Ju/'Hoansi residents of Nyae Nyae, while the remaining funds have been used to cover the operating costs of the conservancy in the form of paying staff, maintaining village and wildlife water points, and supporting select agricultural initiatives.

Table 4. Trophy Hunting Quotas For The Nyae Nyae Conservancy from 1998-2003.

Species	1998-2001	2002-2003
Elephant	2	4
Kudu	2	8
Oryx	2	8
Leopard	2	3
Hyaena	2	2
Blue wildebeest	-	5
Red hartebeest	-	8
Springbok	-	3
Eland	-	3
Duiker	-	4
Steenbok	-	4
Roan antelope	-	1
Totals	**10**	**53**

4.1.3 Potential For Increased Generation of Wildlife-Related Benefits In The Nyae Nyae Conservancy:

As highlighted above, the income and livelihood benefits generated by the Nyae Nyae Conservancy have grown markedly over the past five years, to the point where the Conservancy is now providing more than 50% of the per capita livelihood benefits to the Nyae Nyae residents during 2003. However, a review of Nyae Nyae's additional potential, exploitable wildlife and tourism opportunities indicates that annual benefits can still be increased several fold over the next few years if appropriate conditions are put in place.

The keys to increasing these benefits are the continued growth of the Nyae Nyae wildlife populations, government recognition of the validity of wildlife and tourism as the predominant landuse in the Nyae Nyae conservancy, and development of mechanisms that allow Nyae Nyae to produce and sell their high value roan and buffalo populations to lucrative markets found within the disease-free commercial production areas of Namibia and/or South Africa.

The present wildlife stocking rate of the Nyae Nyae Conservancy is only a fraction of its potential carrying capacity. The climate and habitat of Nyae Nyae lend themselves to a conservative stocking rate of 20 hectares per Large Stock Unit (LSU). An extrapolation of this stocking rate against the conservancy's 903,000 hectares therefore indicates a conservative carrying capacity of 45,150 LSUs for the conservancy. Based upon the extrapolated growth rates of the introduced and previously resident populations (1998 census), the seven most significant potential meat producing species of wildlife found in the Nyae Nyae Conservancy would currently include 5,274 animals (Table 2), which is the equivalent of 4,308 LSUs (Table 5), or less than 10% of the Nyae Nyae Conservancy's estimated carrying capacity.

Table 5. Estimated Stocking Rate In Large Stock Unit Equivalents (Bothma, 1996) for Potential Meat-Producing Wildlife Species In The Nyae Nyae Conservancy 2003, 2007, and 2015.

Species	LSU Equivalent	Estimated LSUs 2003	Estimated LSUs 2007	Estimated LSUs 2015	Estimated No. Animals
Red Hartebeest	.37	269	438	807	2,182
Oryx	.56	656	1068	1968	3,514
Blue Wildebeest	.50	274	443	815	1,629
Springbok	.15	132	257	553	3,685
Eland	1.08	289	465	861	797
Kudu	.54	511	833	1534	2,841
Elephant	2.78	2177	2850	4896	1,761
Totals		4308	6354	11434	16,409

Game Meat Harvesting:

Continued expansion of the Nyae Nyae populations (based upon 2% annual offtake rates for trophy hunting through 2007; and thereafter, from 2007-2015 through a combination of trophy hunting [at 2%] and meat harvesting at [6.5%] per year offtake) would still yield growing populations of approximately 11.5% per annum for springbok and 6.5% for other plains game species (Figure 7). At these growth rates, it is estimated there would be approximately 14,648 plains game animals in Nyae Nyae by 2015. Similarly, if elephant populations maintained growth rates of 7% per annum, approximately 1,761 elephants would be resident in the conservancy by 2015. Cumulatively, these six species of plains game and elephant would equate to 11,434 LSUs, or still only 25% of the conservancy's estimated carrying capacity (Table 5).

The benefits of utilizing the plains game species and elephant for sustainable consumption are twofold. First, the livelihood benefits of harvesting the plains game for meat would yield

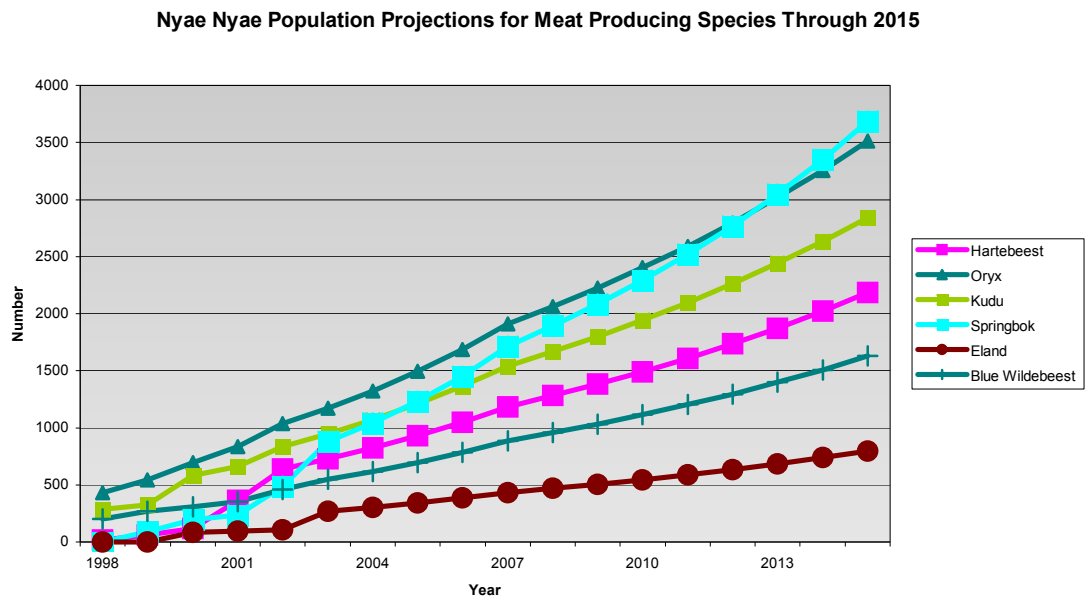

Figure 7. Extrapolated population growth rates for Nyae Nyae plains game species, based upon sustainable offtakes of 2% for trophy hunting through 2015 and 6.5% for meat harvesting from 2007 – 2015.

significant nutritional benefits to the Ju/'Hoansi people. Based upon the above projected population growth rates, by 2007 the meat offtake from the plains game and trophy elephant harvests would yield 66 tons of meat for local consumption, and by 2015, this figure would increase to 117 tons (Figure 8). At a 3% growth rate, the Ju/'Hoansi population of Nyae Nyae is projected to grow to 2251 in 2007 and 2851 by 2015, which would result in potential allocations of 29 kgs and 41 kgs of meat per year per capita in the Nyae Nyae Conservancy in 2007 and 2015, respectively. At today's market value of N$8/kg for venison, the present-day value of this meat benefit would be N$528,000 in 2007 and N$936,000 by 2015.

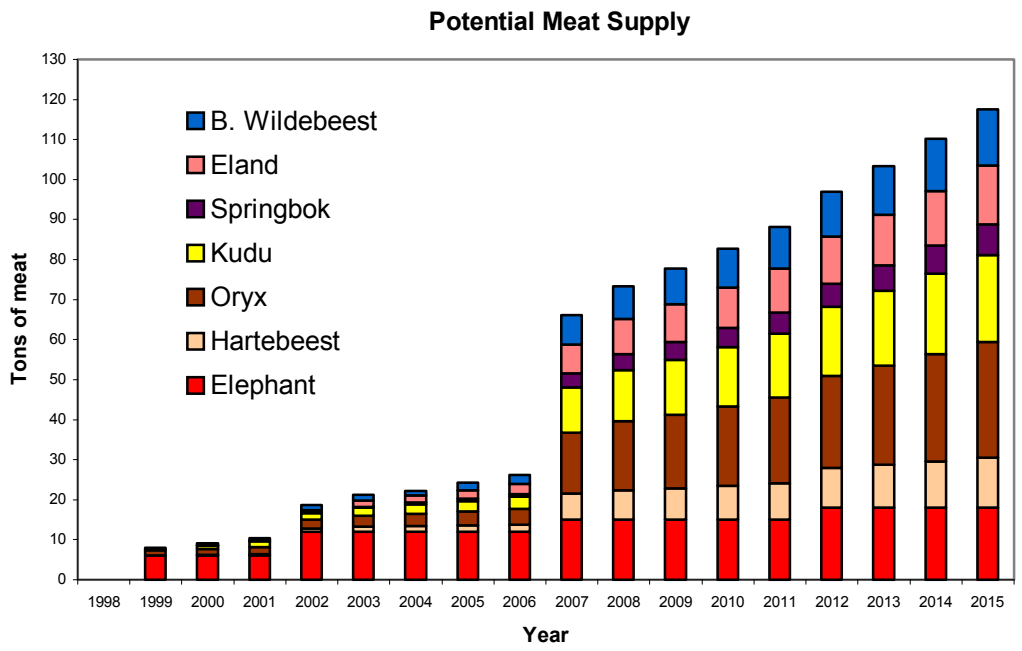

Figure 8. Projected tons of meat that could be harvested from Nyae Nyae Conservancy plains game and trophy elephants.

Live Sales of Wildlife:

Plains Game:

A potential alternative to harvesting the plains game for in-kind meat benefits would be to sell them as live game for cash payments. There is a vibrant and viable market for the sale of common plains game in both Namibia and the southern Africa region. However, the Nyae Nyae Conservancy's location in Namibia's Foot and Mouth Disease Buffer Zone presently makes it difficult to capitalize on the income these species are capable of generating. Nonetheless, the following projections have been compiled to provide a comparative analysis of the value of these species through live capture versus harvesting for meat (Table 6). These projections indicate live game sales (at 6.5% of herd offtake) would generate a total income of N$572,000 during 2007 and N$1,134,300 during 2015. While these figures are slightly more than the in-kind cash value of harvested game, the associated costs (i.e., feed, disease tests, death loss, etc.) of quarantining these animals for a three-week period, plus capture and translocation costs, makes live sales a less attractive option to the Nyae Nyae Conservancy.

Table 6. Present-Day Values and Potential Numbers (Based Upon 6.5% Offtake) of Plains Game That Could Be Sold From The Nyae Nyae Conservancy In 2007 and 2015 As An Alternative To Meat Harvesting.

Species	Present Day Value N$	2007		2015	
		Projected Animals for Sale	Total Value N$	Projected Animals for Sale	Total Value N$
Red Hartebeest	1,700	50	85,000	94	159,800
Oryx	1,700	80	136,000	151	256,700
Blue Wildebeest	2,200	35	77,000	68	149,600
Springbok	1,000	106	106,000	241	241,000
Eland	4,000	16	64,000	33	132,000
Kudu	1,600	65	104,000	122	195,200
Total Estimated Income[6]			**N$572,000**		**N$1,134,300**

[6] The income projected from live sales of game reflects the total value of animals at present day auction prices in Namibia, but does not portray the actual income the conservancy would make by selling these

High-Value Game Species:

Another more attractive income-generation option revolves around Nyae Nyae's high-value game species. Since 1991 the returns from live animals sales in South Africa's game industry have risen from approximately R10,000,000 to R88,000,000 in 2001, and during this timeframe roan antelope and disease-free buffalo values have increased by 178% and 72%, respectively (Boonzaaier, 2001). During 2002, the average regional selling prices for roan antelope ranged from N$155,000 – N$170,000, while disease-free buffalo had an average value of N$126,000 (van Rooyen, 2003).

The Nyae Nyae/Kaudom area contains Namibia's largest concentration of roan antelope and the Nyae Nyae Conservancy also is home to a small herd of buffalo. Both of these populations, under proper management, could yield lucrative returns to the Nyae Nyae Conservancy. But, as with the sale of the plains game, the conservancy's location in Namibia's Foot and Mouth Disease Buffer Zone presently prevents exploitation of this lucrative opportunity. Further compounding the matter is the fact that no buffalo are allowed below the Namibia Veterinary Quarantine Red Line, thus preventing introduction of buffalo into Namibia's commercial farmlands where a strong demand for this species has been voiced by the hunting and game production industry.

In 1996, under instructions from the Ministry of Agriculture, Water, and Rural Development (MAWRD) Veterinary Department, the MET moved Nyae Nyae's free-roaming buffalo population of 30 animals into a controlled 2,400 hectare camp. Shortly thereafter, the buffalo were tested for Foot and Mouth Disease (FMD), Theileriosis (Corridor disease), tuberculosis,

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animals. Actual profit would be considerably less, as the costs of capture and transport of these animals would need to be subtracted from the total gross income.

and lung sickness. The tests found one animal to be serologically positive for FMD, resulting with the animal being removed from the herd and destroyed. Subsequently, the herd was again tested and found to be disease-free. By September 2002, the herd had grown to 68 animals, and it was decided to reconfirm their disease-free status. Results of tests for FMD, Theileriosis, and Brucellosis were once again negative, reaffirming the disease-free status of the Nyae Nyae herd (Reuter, 2002).

Over the past year the Nyae Nyae buffalo herd has grown to 74 animals, but the herd is rapidly approaching the carrying capacity of its 2,400 hectare camp and costly supplemental feed now has to be provided to maintain the herd's condition. Thus, there is an imperative need to enlarge the camp or construct a new one so the herd can continue to grow under optimal conditions. This could be a prohibitively expensive undertaking given the current veterinary restrictions against the introduction of buffalo on to Namibia's commercial lands and/or the transport of these buffalo across Namibia's unrestricted veterinary zones. However if these restrictions were relaxed, the commercial development of the Nyae Nyae Conservancy disease-free buffalo herd would become highly lucrative. Furthermore, the development of such a production facility could be done in such a manner that some of Nyae Nyae's roan antelope could be moved into the facility and managed for live sales as well.

According to Martin (2003) buffalo populations in 400-500 mm rainfall belts can be expected to grow at rates between 2.71% and 4.13% under free-ranging conditions where predation and poaching have strong influences on herd productivity. In contrast, Stuart-Hill (1997) developed a simple population growth model for the Nyae Nyae buffalo herd that projected herd growth rates at 15.5% per year, and it is interesting to note that the Nyae Nyae herd growth rate has almost identically mirrored the Stuart-Hill model that predicted a population of 76 by 2003.

Thus, it would appear the Nyae Nyae herd could be potentially managed for a growth rate of 15% per year under appropriate conditions.

For purposes of projecting possible income from the live sales of Nyae Nyae buffalo and Roan antelope it is assumed that both species will reproduce at 15% per annum. A management objective for buffalo could be to build the herd to 100 animals and then commence the sale of live animals at 6% per annum. This offtake level would allow maintenance of a steady growth rate of 9% per year, which could be maintained until the herd reaches a population of 150. From this point onwards the objective could be to sell 9% of the annual growth and maintain herd growth at 6%. Given the anticipated low starting population of the roan herd, the objective should be to not sell animals until the herd reached 50 in number. At this threshold point the sale of live animals could be initiated at 6% per annum, while the annual herd growth rate could be maintained at 9% for the foreseeable future.

Population projections for buffalo are based upon the present number of 74 buffalo and a proposed breeding herd of 40 roan antelope to be established in 2005. Based upon these assumptions, the Conservancy could generate N$1,362,000 from live game sales in 2007 (N$882,000 from the sale of 7 buffalo and N$480,000 from the sale of 3 roan). By 2015 this figure could increase to a total of N$3,228,000/year from the sale of 18 buffalo and 6 roan (Table 7). Perhaps even more significant is the accumulated asset value the Conservancy would acquire through this process. By 2015 the buffalo herd would have grown to 195 animals, while the roan would have increased to a herd of 99 animals. The asset value of these animals (at present day values) would be an impressive N$40,410,000.

Table 7. Projected Annual Income In Namibian Dollars From Live Sales of Buffalo and Roan Antelope To The Nyae Nyae Conservancy For The Years 2005, 2007, and 2015.

Species	Present Day Value N$	2005		2007		2015	
		No. to be sold	Total Value	No. to be sold	Total Value	No. to be sold	Total Value
Buffalo	N$126,000	6	756,000	7	882,000	18	2,268,000
Roan Antelope	N$160,000	0	0	3	480,000	6	960,000
Total per Year		6	756,000	10	1,362,000	24	3,228,000

In addition to capitalizing on the production and sale of the buffalo and roan in Nyae Nyae, the Conservancy could also potentially consider re-establishing a white rhino population and introduction of sable from nearby West Caprivi. These species would also contribute substantial financial returns to the Conservancy from live sales. Further, the presence of all four of these species in a 10,000 hectare high-value game production center would prove highly attractive to an up-market lodge operation in the Nyae Nyae Conservancy.

Expansion of Trophy Hunting Operations:

As the game populations increase, the annual trophy quota can be expanded. Table 8 reflects a projection of the potential increased quotas and associated trophy hunting revenues that Nyae Nyae could achieve in 2007 and 2015. These projections are based upon a number of factors, including: 2% and .015 % harvest rates for plains game species and elephant, respectively; annual growth rates of 20% for springbok, 15% for the remaining plains game species, and 7% for elephant; and meat harvesting of plains game at a rate of 6.5% of the respective populations from 2007, onwards. The projections also assume game water points are expanded and the area remains predominantly managed for wildlife. In addition, as game numbers increase the volume of trophies available for harvesting will far exceed the capacity of one concessionaire. Hence, it is projected that the Nyae Nyae Conservancy will be partitioned into two hunting

concessions in 2007 and five by 2015, and the Conservancy would then receive additional conservation support fees from each concessionaire similar to those paid by the current concessionaire. Lastly, no increased quotas or fees were factored in for leopard, hyaena, duiker, steenbok or roan antelope, as these species have not been built into the model. But income from these species would most certainly increase as well.

Table 8. The Current Number and Value of Nyae Nyae Conservancy Trophy Animals Versus Projected Numbers and Values In 2007 and 2015, Based Upon Current Concession Values of Each Species.

Species on Quota	2003		2007		2015	
	Quota No.	Value (US$)	Quota No.	Value (US$)	Quota No.	Value (US$)
Elephant	4	60,000	7	105,000	26	390,000
Kudu	8	6,400	27	21,600	53	42,400
Oryx	8	5,600	34	23,800	65	45,500
Leopard	3	3,000		3,000		3,000
Hyaena	2	600		600		600
Blue wildebeest	5	2,500	18	9,000	33	16,500
Red hartebeest	8	4,000	21	10,500	40	20,000
Springbok	3	750	29	7,250	67	16,750
Eland	3	3,000	9	9,000	16	16,000
Duiker	4	600		600		600
Steenbok	4	600		600		600
Roan antelope	1	2,000		2,000		2,000
Concession Conservation Support Payments	1	7,000	2	14,000	5	35,000
Totals	**53**	**$92,050**	**145**	**$206,950**	**300**	**$588,950**
N$ Equivalent at N$8 to US$1		N$736,400		N$1,655,600		N$4,711,600
Employment Income	1	N$35,000	2	N$70,000	5	N$175,000

Based upon the above calculations, the 2007 trophy hunting operation has the potential to generate US$216,950/year (N$1,655,600), and by 2015, a total of US$588,950 (N$4,711,600) could be reaped. In addition, the creation of four additional hunting concessions would produce approximately six more jobs per concession, with the employment value being roughly

N$35,000/year per concession or an additional N$175,000/year. These increased cash revenues would prove instrumental in promoting further recovery and management of the conservancy's natural resources and would significantly contribute to the livelihoods of conservancy members through dividends or development activities. Finally, the meat from the trophy animals would complement the potential game meat harvests of 66 tons in 2007 and 117 tons in 2015 (Figure 8).

Joint Venture Tourism Lodges:

The growing wildlife populations, combined with the recent opening of a border gate between Botswana and Namibia on the eastern boundaries of the conservancy, have also sparked interest from the private sector with regards to establishment of an up-market tourism lodge in the conservancy. To date, the remoteness of the Nyae Nyae/Kaudom area has prevented meaningful tourism development. However, the new border gate will conceivably allow development of a popular southern Africa tourism route between the Okavango Delta and the Etosha National Park, with stopovers in the Nyae Nyae/Kaudom complex, making tourism a viable activity. The development of a private sector/conservancy joint venture up-market 16-bed lodge, similar to the Damaraland Camp in Torra Conservancy, would generate approximately N$300,000/year in revenues for the Conservancy, and an additional N$250,000/year in employment benefits through the creation of 13-15 more full-time jobs. Furthermore, as the area becomes better known and marketed, it can be hypothesized that a second lodge would also become viable by 2010, and a third by 2015. Should this scenario unfold, the tourism benefits returns to the conservancy and members would add an estimated N$900,000/year in cash and N$750,000/year in employment benefits back to the conservancy by 2015.

4.1.4 Synergetic Benefits of Cooperative Management of The Kaudom National Park With The Nyae Nyae Conservancy:

As discussed earlier, the optimal development of the Nyae Nyae Conservancy and adjoining Kaudom National Park will only be achieved if there is coordinated and synergetic management between the two areas. If this is achieved then the elasticity of both areas is greatly enhanced, thereby allowing game to move freely between the park and the conservancy as climatic conditions dictate. Under this scenario, the risks of typical "boom and bust" production cycles so prevalent to arid and semi-arid habitats will be substantially reduced by minimizing the chances of extensive, long-term overgrazing of either area. Further, the larger management unit provides increased habitat for Kaudom's elephant population to expand, thereby alleviating anticipated threats that dense populations of elephants pose to such high-value species as roan antelope.

4.1.5 Summary of Potential Nyae Nyae Conservancy Development Opportunities:

The above development opportunities illustrate there is significant opportunity for the Nyae Nyae Conservancy to increase its already meaningful income several-fold between now and 2015. Table 9 (below) highlights the current income and benefits the Nyae Nyae Conservancy is presently generating versus those which are potentially achievable in 2007 and 2015. As portrayed, wildlife and tourism related income and benefits generated in the Nyae Nyae Conservancy could feasibly increase from the N$1,270,574 in 2002 to N$4,572,311in 2007 and N$11,510,996 by 2015.

Table 9. Actual Income and Benefits Generated By The Nyae Nyae Conservancy In 2002 Versus Projected Income & Benefits If Increased Game Populations Facilitate Expansion of The Trophy Hunting Operation and Introduction of Game Harvesting, Tourism Lodges and High-Value Game Production Operations.

Source of Income/Benefit	Actual (2002) Versus Projected N$ Value of Income and/or Benefit					
	2002		2007		2015	
	Cash	Employment / In-Kind	Cash	Employment / In-kind	Cash	Employment / In-kind
Hunting Concession Payment	845,697		1,655,600		4,711,600	
Wages From Professional Hunter		36,101		70,000		175,000
Handicrafts Sales[7]		264,334		406,711		810,396
Value of Game Meat Consumed		124,442		528,000		936,000
JV Tourism Lodge Revenues			300,000		900,000	
JV Tourism Employment Benefits				250,000		750,000
Live Game Sales			1,362,000		3,528,000	
Annual Subtotals	**845,697**	**424,877**	**3,317,600**	**1,254,711**	**8,839,600**	**2,671,396**
Annual Totals	**N$1,270,574**		**N$4,572,311**		**N$11,510,996**	
Per Capita Benefit	**N$635**		**N$2,031**		**N$4,038**	

The above figures translate to the equivalent of pro-rated per capita benefits for the Ju/'Hoansi people of N$635 in 2002, N$2,031 in 2007, and N$4,038 in 2015 (assuming the present day conservancy population of 2000 people grows at an annual rate of 3%). It should be further clarified that these figures represent present-day values and do not take into consideration inflationary increases, potential increases in market values of the products being offered, nor the long-term trend of the devaluation of the Namibian Dollar against the US Dollar or Euro, which will be the currency used for most of the tourism related products. Furthermore, the figures have been kept purposely conservatively low in order to keep in touch with the development realities of the area.

[7] Handicraft sales have been increased at a rate of 9% per year, which is in-line with the current annual tourism visitation increases in Namibia.

4.1.6 Summary of Nyae Nyae Conservancy / Kaudom National Park Case Study:

Thus far the Nyae Nyae Conservancy has made a promising start towards improving the livelihoods of its highly marginalized Ju/'Hoansi people. The 1996 conservancy legislation granted communities the rights to benefit from wildlife, and this Act provided the Ju/'Hoansi community members incentive to become more involved in the management of their wildlife resources. As a result, wildlife populations in the Nyae Nyae Conservancy are increasing, with the increased wildlife populations being translated to increased cash and in-kind benefits to conservancy members. Though Conservancy cash and in-kind benefits amounted to a substantial N$1,270,574 in 2002, it is believed the Nyae Nyae Conservancy's wildlife resources have the potential to generate almost 10 times this level of return by 2015. In addition, there is massive scope for even greater returns, as these projections are premised upon a wildlife stocking rate of only 25% of the Nyae Nyae Consevancy's estimated carrying capacity.

Should the Ju/'Hoansi continue to develop their wildlife resources, it is likely that wildlife and tourism activities will become the primary source of their welfare. However, there are a number of conditions that must fall in place in order to optimize the development of the Nyae Nyae Conservancy's resources:

- First and foremost, there is a need for the Government of Namibia to give greater recognition of the validity of wildlife and tourism as legitimate landuses, and in the process, demonstrate a willingness to zone and manage extensive portions of Namibia's arid landscapes for this purpose. In the case of Nyae Nyae, there is a strong pressure from neighboring Herero herdsmen to move large herds of cattle into the Conservancy. Should this happen, uncontrolled grazing and escalating cattle numbers will ultimately lead to degradation of Nyae Nyae's pristine wildlife habitat, thereby spreading a

debilitating desertification process northwards from heavily overgrazed rangelands to the south of Nyae Nyae;

- Secondly, and related to the above, there is a crucial need to change the mindset and paradigm of government decision-makers. There is often a perception that land not being used for livestock or crop production is land unproductively used. In the case of Namibia's fragile arid and semi-arid landscapes, this is a particular fallacy, as overgrazing by livestock is especially damaging to low-rainfall grazing regimes and efforts to produce crops, more often than not, lead to failure. Though conservancies are beginning to demonstrate the viability of wildlife and tourism as competitive landuses, the agricultural sector still continues to be strongly subsidized at the expense of wildlife and tourism development opportunities. Reflective of this mindset is the Namibia Government FY 2003/04 budget that allocated a total of N$545,981,000 to the Ministry of Agriculture, Water and Rural Development (MAWRD) versus the N$171,438,000 provided to the Ministry of Environment & Tourism (Kangueehi, 2003). Thus, Namibia's agricultural section is receiving 320% more financial support than the MET, even though tourism generates equal or greater economic returns to the Namibian economy than agriculture. The above figures reinforce the need to not only shift the mindset of decision-makers, but to balance the budget allocation and support structures if the wildlife sector is to be allowed to fairly compete with agriculture;
- Thirdly, there is a need to better integrate wildlife and agricultural production activities into the daily livelihood strategies of rural community members. The rigid veterinary restriction on the movement of wildlife (especially the disallowance of buffalo) from north of the Namibia Red Line into Namibia's commercial areas is a prime example of a highly subsidized agricultural initiative that undermines the ability of communities to

optimize their financial and economic returns from ecologically-more appropriate wildlife production approaches. Both South Africa and Zimbabwe have found means of legitimately promoting wildlife production systems, so it is hoped that Namibia will soon follow suit;

- There is also a need to better integrate and harmonize wildlife and agricultural activities at village community levels. In the case of Nyae Nyae, there is scope for introducing small horticultural production activities, but this will require the introduction of measures to mitigate the conflict being created by expanding Nyae Nyae and Kaudom elephant populations. Though arable agricultural production has limited potential in Nyae Nyae, there is a need for the Ju/'Hoansi to introduce appropriate technology (i.e., drip irrigation systems) to allow small-scale gardens to be developed at the village level to supplement their nutritional needs;
- There is a strong need for government and the Ju/'Hoansi to coordinate and jointly plan and manage the Nyae Nyae Conservancy and Kaudom National Park as a contiguous landscape. The development of wildlife watering points in the conservancy and Kaudom NP and introduction of game into Nyae Nyae are examples of solid initiatives that have benefited both the conservancy and the park. However, both initiatives have been under-funded and weakly coordinated, and there is need to strengthen the synergy that is possible by co-planning and co-management between the conservancy and park; and
- There is continued need for donor and technical support to the Nyae Nyae Conservancy, as the transitional nature of its community society and culture places the Ju/'Hoansi people at competitive disadvantage to other ethnic groups in Namibia. Given current low literacy levels

5.0 CONCLUSION:

The Namibia conservancy movement, though still young, has made extensive headway since registration of the first conservancies in 1998. The presence of 17 of the registered conservancies adjacent to protected areas is increasing the viability of Namibia's protected area network, while the 29 registered conservancies cumulatively increase land under conservation management in Namibia by more than 74,000 km^2. Some conservancies, such as the Nyae Nyae Conservancy, are now contributing significant flows of benefits to their membership, and conservancy operations are becoming embedded into the livelihoods of rural community members.

Though the benefits from conservancies have doubled in three of the past four years, most communal conservancies remain financially marginalized due to their presence in Namibia's Foot and Mouth Disease Buffer Zone and their resultant inability to realize the full value of their burgeoning wildlife populations. This situation is further compounded by a paradigm that guides many government policy makers to believe that wildlife and tourism enterprises are not productive land uses. As a consequence, Namibia's subsistence and commercial agricultural support systems receive a budgetary allocation that is more than 300% higher than the national conservation budget, even though tourism contributes equal or greater amounts to Namibia's Gross Domestic Product.

Optimal development of Namibia's promising wildlife resources will require policy adjustments that give recognition to the validity of wildlife and tourism as a competitive landuse with agriculture and promote the effective introduction and integration of wildlife/tourism enterprises in communal areas that hold promise to generate competitive returns on investment. In

particular, there is a need to constructively address rigid veterinary restrictions that prevent conservancies from capitalizing on the presence of their high-value game species such as roan and sable antelope and disease-free buffalo.

Should the above adjustments be made a fertile framework will be in place to promote competitive and more environmentally appropriate forms of wildlife landuse to Namibia's arid and semi-arid landscapes.

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