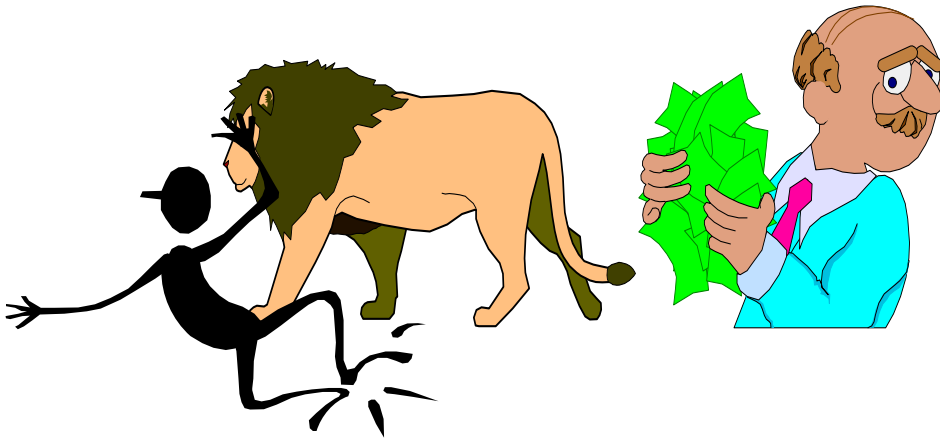


CONSTRAINTS IN IMPLEMENTING THE BENEFIT-BASED APPROACHES AS A STRATEGY FOR CONSERVING WILDLIFE IN WESTERN SERENGETI, TANZANIA



JAFARI R. KIDEGHESHO

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*"A classroom from conservation initiative cannot match up to loss of 70,000 cattle which will die from loss of
pasture and water inflicted by the Game Reserve"*
A direct quote from Taturu pastoralist adjacent to Grumeti Game Reserve in Western Serengeti July 28, 2003.

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Abstract

Following the perceived failure of “*fences and fines*” conservation approaches, Community Conservation (CC) has become a major paradigm of conservation work in Africa and elsewhere. CC is rooted in benefit provision as its major component, holding assumption that by providing tangible benefits, the local people will be motivated to align their behaviours with conservation goals. Proponents of the strategy view it as a pragmatic way of transforming wildlife from a liability to an asset and therefore reconciling conservation interests with development. Along with improving the relationship between conservation agencies and communities, the strategy is also expected to provide incentive for conservation through improving the local economy. This paper employs the current conservation programmes in Serengeti to establish whether the strategy has a desired impact for future of wildlife in the area. It finally recommends some measures to strengthen the strategy in order to better its contribution to conservation.

INTRODUCTION

Many protected areas in Africa share a common salient feature: historical poor public relations and minimal support from local communities. This scenario is attributed to marginalisation of local people through conventional conservation policies perpetrated by colonial and later passed over to post-colonial regimes. These policies ended all traditional customary rights and management strategies. The locals were barred from any political debate pertaining to wildlife conservation issues (Gibson and Marks 1995; Lewis, et al. 1990; Neumann 1992). While much attention was paid to the interests of the whites when protected areas were created, native interests were grossly ignored. For instance, British

conservationists rated Serengeti as an ideal place for a National Park because the insignificant mineral deposits, infestation of tsetse flies and scant rainfall made the area unattractive to European miners and farmers (Bonner 1993). Prohibitive laws were enacted to bar the natives from hunting species of social and economic importance like antelopes, buffalo (*Syncerus caffer*) and hippo (*Hippopotamus amphibius*). Native hunting was rated as 'barbarous, cruel and wastage' (Adams and McShane 1996; Bonner 1993; Neumann 1992; Neumann 1998; Rangarajan 2003). However, permission was granted to kill species, which the white settlers deemed to be vermin. These included lion (*Panthera leo*), leopard (*Panthera pardus*), hyena (*Crocuta crocuta*) and bush pigs (*Potamochoerus porcus*) (Neumann 1998).

Conventional policies conceptualised native resource users as the conservation 'problem' and, therefore, their forceful eviction from the protected areas and criminalisation of their practices were seen as necessary steps for achieving conservation goals (Hulme 1997). New words were coined to describe native practices. The common ones were, poaching (for illegal access of resources from protected areas - e.g. game meat, firewood, medicinal plants), trespassing (for entry or grazing in protected areas) and encroachment (for cultivation or settling in protected areas). The militaristic strategy was used to ensure compliance, leading to terms such as 'fences and fines', 'preservationist approach' or 'fortress conservation'. Natives, as Gibson and Marks (1995:952) observe, were "...targeted only for punishment."

The postcolonial governments inherited the colonial conservation policies uncritically, contrary to expectations held by the natives that the political independence would restore their lost customary rights¹. This happened because the new governments needed the economic base for political power and resource for promised socio-economic development. Wildlife-based tourism was seen as a promising sector to this end (Gibson 1999; Levine 2002; Neumann 2002). Furthermore, the African post-colonial States kept the colonial laws for fear

¹ Nationalist/freedom movements recognised colonial conservation policies as injustice that its political agenda would address

of disappointing the donor agencies, which funded most of their development programmes. Deep respect for the wishes of Europeans and Americans, including prominently international environmental organisations and their constituencies have long served as prerequisites for ensuring continuation of the flow of grants and loans (Nelson 2003).

Failure of political independence to end the prohibitive and punitive conservation laws justified continuation of local resentment. This was manifested by increasing violation of laws, physical violence, and vandalism on resources (IIED 1994; Machlis 1989; Neumann 1992; Wells and Brandon 1992; Western 1984). Adoption of harsher means to deal with criminals [e.g. Kenya and Zimbabwe's 'shoot-to-kill' policy against poachers (Bonner 1993:17-18)] did not stop illegal activities. The situation worsened in the 1970s and 1980s following severe economic recession that befell African governments. This diminished the financial capacity to enforce wildlife laws and stem the tide of poaching, which was exacerbated by a decrease of commodity export prices, high inflation rates, a general decline in living standards of rural people and the rise of international demand for wildlife products (Gibson and Marks 1995; Packer 1994; Yeager 1986). This situation made the practitioners and scholars to conclude that 'fences and fines' approach had failed to protect wildlife. Searching for more viable and sustainable approach, therefore, became a matter of urgency (Büscher and Dietz 2005; Gibson and Marks 1995). The new approach recognised local communities as the key focus for success of conservation agenda. The basic premise of this approach was that: tangible benefits are vital motivational factor for local people to align their behaviours with conservation goals, or as Gibson and Marks (1995:942) put, "to transform the would-be poacher into an individual with a sense of proprietorship over wildlife."

Three broad categories of the benefits are provided to induce behavioural change: (1) those linked directly to wildlife - e.g. employment, game meat and income; (2) those linked indirectly to wildlife - i.e. development projects e.g. classrooms, clinics, bridges, famine relief

and grinding mills and; (3) those related to empowerment of rural residents (or political benefits) – allowing greater degree of local participation in decision making (Gibson and Marks 1995).

Despite ambitious objectives carried in most of the projects intending to implement benefit based approaches, several evaluations have rated them as failures. The interventions were unable to end illegal hunting and had sometimes fomented hostility in the rural areas (Gibson and Marks 1995; Songorwa 1999). A plethora of reasons behind the poor performance of these interventions have been identified. They entailed: inadequate benefits (compared to costs of conservation); inequitable distribution; undelivered promises and unrealised expectations (Gadd 2005; Songorwa 1999); lack of, or limited participation of communities in decision-making for resource management (Gibson and Marks 1995; Parry and Campbell 1992). Other reasons include problematic, untested and unjustified assumptions; failure to honour communities' priorities (Barrett and Arcese 1995; Gibson and Marks 1995; Songorwa 1999); inadequate political commitment (Songorwa 2004b); inadequate socio-economic data for effective design (Gibson and Marks 1995; Wells and Brandon 1992) and; obscure critical linkage between development and conservation objectives (Barrett and Arcese 1995; Berkes 2004; Newmark and Hough 2000).

This paper seeks to contribute to a debate on efficacy of the benefit-based approaches by identifying the implementation constraints facing the benefit-based programmes in the western Serengeti. The paper is framed on three empirical questions derived from criteria considered to be necessary for sustainable resource management: (1) do the benefits enhance the value of the resource to communities? (2) Are the proceeds well enough distributed? and (3) is the future access and control of the benefits sufficiently guaranteed? (De Merode, et al. 2003; Gillingham and Lee 1999; Hackel 1999; Madzudzo 1997). Before embarking on a discussion about implementation aspects of the approaches, a brief review of the community-

based approaches in Tanzania is given. This review narrows to community conservation approaches in Serengeti and description of the study area.

2. BENEFIT-BASED APPROACHES IN TANZANIA

A deep economic recession that befell Tanzania between 1970s and 1980s – a situation also experienced by other African countries – caused a serious under-funding of the natural resources sector (i.e. wildlife, forestry and fisheries). From 1976 to 1981, the sector was the least financed, receiving 1.2% only from the national development budget. In this period only US\$52 million were allocated for the entire sector (Yeager 1986). The situation continued to worsen for wildlife subsector. For instance, in 1994 and 1995 the Wildlife Department had a total budget of US\$1.04 Million and US\$1.01 Million, respectively – a decrease of 3% (URT 1995). The Selous Game Reserve's budget in 1987 amounted to US\$3/km² (Baldus, et al. 2003). This was far less compared to the amount required for effective control of commercial poaching, which ranged between US\$200 and 400/km² per annum² (Bonner 1993; Leader-Williams, et al. 1990). This meagre budget translated into poor staffing and inadequate equipment. The staff area ratio in most protected areas was 1:125 (persons:km²), far below the ideal ratio which is 1:25 (Severre 2000). Districts had no vehicles and each administrative region had only one vehicle despite the poor road networks and large areas³ (Masilingi 1994).

The species that suffered most from poaching were rhino (*Diceros bicornis*) and elephant (*Loxodonta africana*). In addition to budget constraint and, therefore, inefficient state-led enforcement, external market forces provided further incentive for overexploitation of these species. The price for a kilogram of ivory rose from US\$ 5 in 1960 to US\$ 52 in 1978. In 1988 it hiked to US\$ 300 (<http://www.achimerfriendsofrhino.de>).

² This figure perhaps is an overestimate. Jachman and Billiouw (1997) reported that 82.2 km² per annum² was required for law enforcement in the Central Luangwa Valley, Zambia.

³ For example, Arusha region spanned some 80,168 km², Tabora - 76,151 km², Rukwa - 75,240 km², Shinyanga - 50,781 km² (Source: <http://www.nbs.go.tz/abstract2002/landandclimate.pdf>).

In 1980 a rhino horn was worth US\$1,000 per kilogram (EMERCSA 2002). In 1981, Tanzania had 3,795 rhinos but the number dropped to only 275 in 1992. Tanzania's Selous Game Reserve alone recorded 50% loss of this species within a decade from 1976 when the number stood at 110,000 (Baldus et al. 2003). In Serengeti, rhino was driven to the verge of extinction while the elephant population was reduced by 80%, just within a decade (1975 – 1986) (Dublin and Douglas-Hamilton 1987). In Tanzania the elephant number declined from 203,000 in 1977 to 57 334 in 1991 (IUCN 1998). Because of poverty the local communities conspired with rich commercial poachers by hosting them and providing labour. In 1989 the Tanzania government intervened to arrest this situation. It launched "Operation Uhai" (uhai is Swahili word for life) that comprised of army, police, and Wildlife rangers (Baldus et al. 2003). Although the operation minimised the problem, it could not be sustained given the resource constraints. Searching for alternative strategies therefore emerged as important conservation agenda.

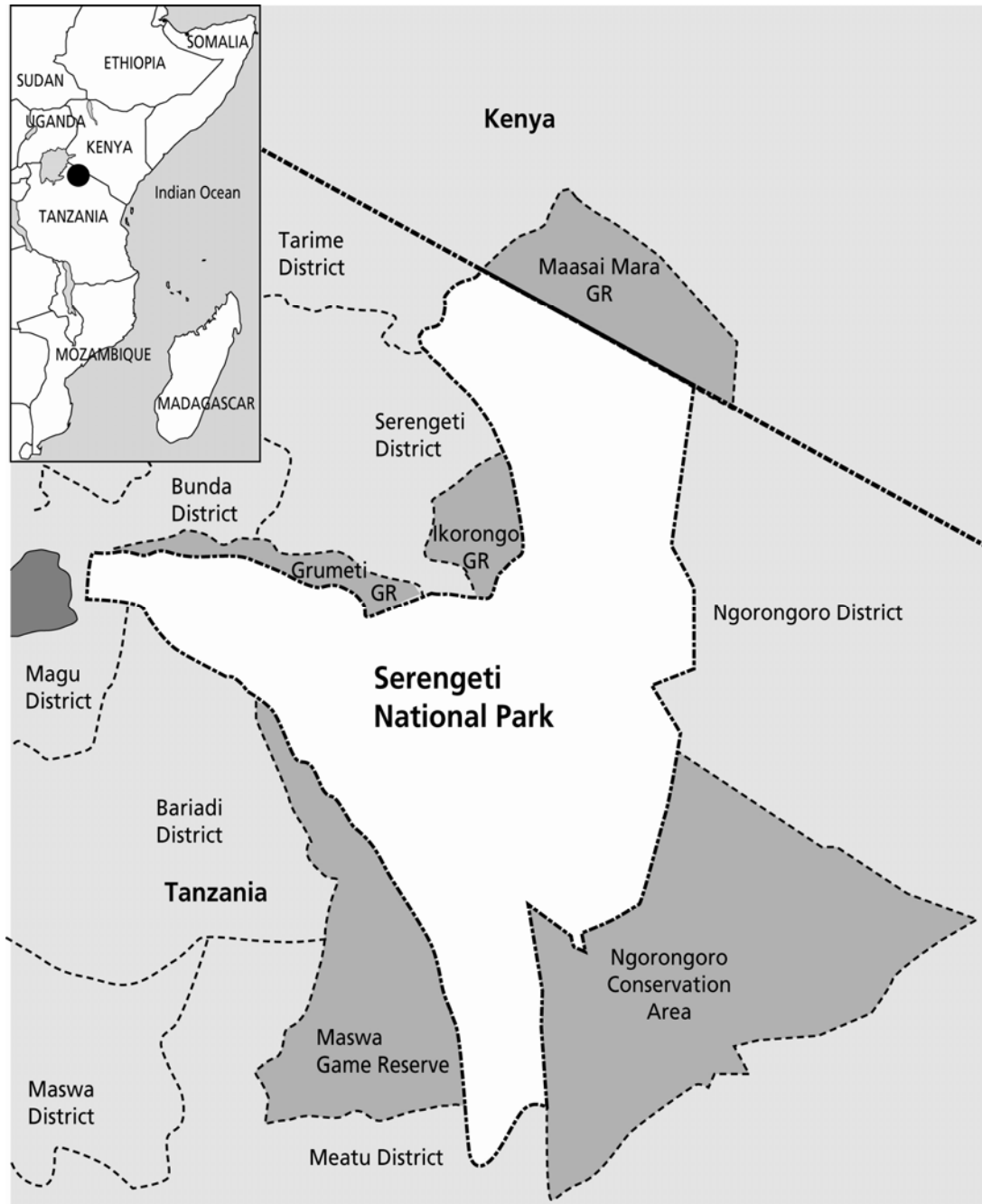
Tanzania, like other African countries, subscribed to Community Conservation programmes with ambitious objectives of reconciling human development and conservation interests. The Selous Conservation Project (SCP) and MBOMIPA⁴ emerged as the country's pioneer flagship conservation projects. Their success and sustainability is, however, being questioned (Songorwa 1999; Songorwa 2004b). A similar intervention was also introduced in the Western Serengeti Corridor to address the long-term conservation and socio-economic problems that threatened the ecological integrity and, therefore wildlife populations.

⁴ MBOMIPA is an acronym from the Swahili name Matumizi Bora ya Malihai Idodi na Pawaga, translated in official documents as 'Sustainable Use of Wildlife Resources in Idodi and Pawaga'.

Western Serengeti: A Case Study Area

Serengeti ecosystem supports a world acclaimed diversity and abundance of wildlife. It covers about 3% of Tanzania's land surface (ca. 945,000 km²). Worldwide's renowned Serengeti National Park (14,763 km²) occupies about half of the ecosystem. The park gazetted in 1951 is also a Biosphere Reserve and World Heritage Site since 1981 (UNESCO 2003). The four Game Reserves in the Western part buffer the park against human impact. These are: Maswa (2,200 km²), Ikorongo (1,867 km²), Grumeti (1,900 km²) and Kijereshi (65.7 km²) (Figure 1). The last three GRs attained the current status in 1994 after being upgraded from Game Controlled Areas. **Figure 1: Location of Serengeti National Park and Adjacent Protected**

Areas



The three GRs play vital ecological roles. Besides serving as a buffer zone for Serengeti National Park, they are also critical migratory corridors for ungulates migrating between the Tanzania's Serengeti National Park and Kenya's Maasai Mara National Reserve. The migration involving some 1.4 million wildebeest (*Connochaetes taurinus*), 0.2 million zebra (*Equus burchelli*) and

0.7 million Thompson's gazelle (*Gazella thompsoni*) (Norton-Griffiths 1995) is one of the world-wide known biological phenomena. The area also provides habitats and dispersal areas for resident herbivores such as giraffe (*Giraffa camelopardalis*), Grant's gazelle (*Gazella grantii*), elephants (*Loxodonta africana*) and hippo (*Hippopotamus amphibius*). Serengeti is also a home for over 500 bird species including ostrich *Struthio camelus* - the biggest bird in the world (Sinclair 1995).

Western Serengeti is diverse in its ethnic composition. Ikoma, Isenye, Kurya, Sukuma, Zanaki, Jita, Ikizu, Ngoreme, Taturu and Luo are dominant among the 20 ethnic groups living in the area. The current population is estimated at two million (URT 2002). These communities derive their livelihood from cultivation and livestock keeping. However, they have historically been involved in illegal hunting as the legal activities they conduct barely sustain their needs. Their annual income ranges from US \$ 150 – 200 (Johannesen 2003), the amount far less than Tanzania's per capita income of US \$ 280 (WB 2003).

The economic options pursued by local communities in order to cope with the rapid population growth and increasing poverty had threatened the ecological integrity of these areas and, therefore, forcing the government and its conservation agencies to adopt some strategies aiming at mitigating these pressures. Along with increasing the protection status of these areas, Community Conservation approaches had been adopted in order to engender local support by inducing change from destructive to more sustainable behaviours. The Serengeti Regional Conservation Project (SRCP) and Tanzania National Park's Community Conservation (CCS) or Outreach Programme were launched for this purpose.

(a) The Serengeti Regional Conservation Project

The Serengeti Regional Conservation Project (SRCP) evolved from a workshop held at Seronera in December 1985. The workshop attended by conservation experts, wildlife agents

and international conservation organizations aimed at "...identifying and implementing the long-term solutions to the resource use conflicts threatening conservation of the ecosystem" (Mbano *et al.* 1995:605). The project started in 1988. The workshop adopted a basic premise that "conservation and human development in Serengeti can no longer proceed in isolation from one another." This, therefore, justified the urgency of designing a new approach toward the management and utilization of the Serengeti Region's natural resources. SRCP, funded by the Norwegian Agency for Development Co-operation (NORAD), started in 1988 with the following objectives: (1) to reconcile human development needs and natural resource conservation requirements in the region through the cooperation of all resource users and managers; (2) to ensure that the protected areas, and wildlife resource in particular, play a central role in the economic development of the region; (3) to inspire local commitment to the conservation of the Serengeti region's wildlife resource through direct involvement of local people in management and utilization of resources (4) to assist local communities to achieve sustainable use of other natural resources in the region through ownership of land and village-generated land use plans, thereby reducing pressures on the resources of the protected areas" (Mbano *et al.* 1995: 606).

(b) Community Conservation Service or Outreach programme

Implemented by TANAPA, the Outreach programmes started in 1988 around Serengeti National Park (SENAPA). When it started it was known as Neighbours as Partners before it changed name to Community Conservation Services (CCS) and now Outreach programme. The programme evolved from a working group at the Serengeti Regional Conservation workshop in 1985, which recommended having a 'Rural Extension Education' programme (Bergin and Dembe 1996). The African Wildlife Foundation (AWF) sponsored a pilot project to support TANAPA in developing its capacity for CCS focusing on three villages (*viz.*

Ololosokwan, Oloipiri and Soit Sambu) of eastern Serengeti in 1988 (TANAPA 2000). In 1992 CCS became a full-fledged department in TANAPA's 12 national parks and at the headquarters. CCS has four objectives: (1) Improving relations between individual parks and local communities; (2) Ensuring that the interests of National Parks with regard to natural resource conservation and community welfare are presented at all levels; (3) Facilitating the sharing of benefits with target communities; and (4) Assisting communities to gain access to information, resources and services which promote sustainable development (TANAPA 1994).

3. CONSTRAINTS OF IMPLEMENTING BENEFIT BASED APPROACHES

As stated earlier, benefit-based approaches seek to induce sustainable conservation behaviour to people by transforming their incentives to kill into a desire to conserve (Gibson & Marks 1995:942). To these end three criteria have been proposed: (1) the resource must have a sufficient value; (2) the proceeds must be well enough distributed and (3) future access and control must be sufficiently well guaranteed. This section adopts these criteria as a basis for discussion on efficacy of the benefit-based approaches in conservation.

3.1 Do the benefits enhance the value of the resource to communities?

A resource can be defined as something (a person, asset, material or capital) which can be used to accomplish a goal (my own definition). For the sake of this discussion, the value of wildlife to local people is measured by its adequacy in addressing people's priorities and felt needs; offsetting the direct costs resulting from conservation; and compensating for the opportunities foregone as a result of conservation.

Failure to address the short-term (felt) needs and non-pecuniary benefits

Despite granting benefits to local people, the SRCP and CCS initiatives had failed to consider people's values i.e. priorities and felt needs. For example, hunting in the area presents significant cultural and spiritual values. It is a marker of personal bravery, skills and spiritual merit, through which successful hunters earn status in the society (also see Kaltenborn et al. 2005). Further to dietary value, the non-food parts of hunted beasts have various uses such as medicinal, protective against sorcerer's magic, and resource for spiritual events. Likewise, the sacred groves and ancestral burial sites within the gazetted areas are critical for religious deity.

Failure of wildlife authorities to understand and reward people basing on what they value and need may diminish recipients' appreciation and defeat the desire of imparting conservation behaviours. Villagers' arguments regarding the classrooms donated by Tanzania National Parks (TANAPA) illustrate this: "Even if the classrooms are as decent as *Ikulu* (State House), children cannot concentrate with their studies on empty stomachs." Another villager noted that, "neither a classroom nor a tarmac road can substitute for lost pasture, firewood and medicinal plants."

Failure of the wildlife-related benefits to offset the wildlife-induced costs

The Wildlife Policy of Tanzania asserts that "the policy will continue to give wildlife economic value to rural communities to enhance rural development without prejudice to the environment, and in such a way that the benefits compensate for the opportunity cost of this form of land use" (URT 1998:17). Despite 15 years of existence, benefit-based approaches in the western Serengeti have not demonstrated this commitment. Local people receive benefits, which are too minimal to balance the costs incurred through crop damage, livestock depredation, wildlife-related accidents and loss of land and other resources.

In an interview with local people some 55% of respondents felt that the trend of damage was increasing while 41% said it was constant but likely to increase due to growth of wildlife populations (Kideghesho, Unpublished data). The Serengeti District Wildlife Officer confirmed this by saying that the costs from wildlife have increased within the past 3-4 years. He attributed this to creation of the new game reserves, which has given rise to improved habitats, effective protection and, therefore increased wildlife populations in proximity to human settlements and their properties. Assessment on crop damage conducted by his Office between November 2003 and January 2004 revealed that some 407 households lost about 192.3 ha of food crops (406.6 tonnes) to wildlife raiding. The monetary value of this loss (using the crop prices in the local market in Mugumu - the district headquarters) is US\$210,000 (an average of US\$516 per household). The wildlife-related benefits (earned mainly indirectly through implementation of development projects) have remained more or less the same as estimated by Emerton and Mfunda (1999) i.e. US\$2.5 per household per annum. These benefits can hardly alleviate poverty – a scenario which in any case may encourage continuation of illegal activities. Table 1 below show the indirect benefits donated to seven districts bordering Serengeti National Parks in a period of five years. The amount per capita in each district is worked out to reflect the actual value earned by individuals.

Table 1: Indirect benefits donated to local people by TANAPA through development projects in seven districts bordering Serengeti National Park***

<i>District</i>	<i>Population in rural areas**</i>	<i>Total donation in 5 years USD*</i>	<i>Average per year (USD)</i>	<i>Amount per person per year (USD)</i>
Serengeti	161,024	248,000	49,600	0.31
Tarime	417,609	84,000	16,800	0.04
Bunda	207,124	98,000	19,600	0.09
Ngorongoro	122,838	49,000	9,800	0.08

Bariadi	572,929	67,000	13,400	0.02
Magu	377,202	25,000	5,000	0.01
Meatu	241,389	97,000	19,400	0.08

*Uhuru (2006); **URT (2002)

*** It is assumed that all villages in rural areas access the benefits

Failure of the wildlife granted benefits to outweigh those from ecologically damaging land uses

Wildlife conservation in Serengeti is pursued along with other activities essential for local economy. These activities include cultivation, livestock husbandry, hunting, mining and fishing. From conservationists' viewpoint, these activities are ecologically damaging and, therefore, incompatible with conservation interests. The impact of these activities on conservation have been increasing with human population growth resulting into habitat loss and a decline of wildlife populations (Campbell and Hofer 1995; Kideghesho, et al. 2006; Kideghesho, et al. 2005; Songorwa 2004a).

The benefit-based approaches directed to local people are claimed to commensurate the challenge envisaged in the Wildlife Policy of Tanzania of ensuring “that wildlife conservation competes with other forms of land use” (URT 1998:9). The ecologically damaging activities are, however, increasing along with people’s resistance to conservation measures proposed by the relevant authorities, suggesting that these activities are still profitable compared to alternatives provided. Two specific cases can illustrate this.

Nyatwali villagers’ reaction on rumours of relocating them as a measure of safeguarding the wildlife migratory route (from Serengeti National Park to Lake Victoria) sounded a warning bell on impending conflicts would the intervention be adopted. They stated bluntly

that they would use any weapon at their disposal to resent a plan. They further ruled out the option of compensation (if the government was willing) on grounds that the actual money would not surpass the benefits from the fishing industry, which they would forego. In Hunyari Ward, in Bunda District, Serengeti National Park's donation of two classrooms and SRCP hunting scheme were slated as unrealistic compensation for the lost pasture and water (following creation of Grumeti Game Reserve).

Previous studies have also demonstrated the failure of wildlife conservation in Serengeti to offer competitive advantage over alternative land uses. For example, an economic value of illegal hunting is 45 times greater than that derived from the SRCP 'cropping' scheme (Holmern *et al.* 2002). In the group ranches adjacent to Kenya's Maasai Mara National Reserve, the lower value of wildlife-based tourism with limited agriculture compared to full-fledged agriculture and ranching (Norton-Griffiths 1995) inspired the landowners to develop the latter, at the expense of core breeding and calving grounds for wildebeest. This had, consequently, caused a decline of resident population by 81% - from 119 000 in 1977 to only 22 000 in 1997 (Ottichilo, *et al.* 2001).

Sometimes the government had made decisions, which implicitly testify the impracticality of the benefit-based approaches in substituting the local land uses. For example, in 2003 the government issued an Order to declare a new boundary for Maswa GR in which the government gave 35 km² of the encroached reserve land to illegal settlers. This move - described as a gentleman's agreement - aimed at ending a long-standing dispute between the wildlife division and people who had unlawfully settled within the area (Chacha 2003). While the option of degazetting this part of the reserve is being challenged (Songorwa 2004a), the move can be used to testify the unfeasibility of the benefit-based approaches. If the government believes that wildlife conservation pays, and that the benefits can compete

with other land uses, why should then yield to local pressures and support the ecologically damaging option by degazetting the reserve?

The research-based literature had led to a general consensus on conditions, which are necessary, if returns from wildlife conservation are to exceed the alternative land use options. These conditions - which must occur together – are either inadequate or lacking in western Serengeti. They include (1) areas with very poor or marginal lands - poor soils, erratic rainfall – and, therefore, rare crop surpluses (Child 1996; Little 1994; Murphree 1996); (2) large tracts of uninhabited and uncultivated land, large wildlife populations and only small human populations (Murphree 1996); (3) less stratified human population economically with strong intra- and inter-community linkages where conflicts are minimal and; (4) where easy market for wildlife products and service is guaranteed (Songorwa, et al. 2000).

3.2 Are the proceeds well enough distributed?

Culprits and non-victims are rewarded

The benefits from conservation initiatives often target the entire community rather than individuals (i.e. public goods). The *non-rivalrous* and *non-excludability*⁵ nature of public goods (e.g. dispensary, roads, schools, bridges) encourage a free riding problem - a situation where some actors take more than their fair share of the benefits or do not shoulder their fair share of the costs of maintaining the resource. Predictably, this raised complaints among the individuals/households who felt that they were being overtaxed through wildlife-related costs, while others were only minimally affected. Some individuals stood a high chance of gaining substantially because of their behaviours (e.g. poaching) and positions (e.g. leadership). Lack of mechanisms that guarantee a fair compensation and reward (or sanction) for individual behaviours gives the victims, non-victims and culprits an equal access to public goods - a

scenario that may leave a desire of checking people's unsustainable behaviours unattainable (see Hardin 1968). During the sessions with villagers, the questions such as "how can one stop a poacher from walking on the road or deny a poacher's son from sitting in a classroom donated by the Park" were common.

The tendency of local elite to monopolise the benefits was also evident. The villagers in SRCP-participating villages accused the village government officials and members of the Village Natural Resources Management Committee (VNRMC) for using their positions to earn lion's share from the game meat hunted through SRCP scheme. This explains why election campaigns to win these posts are big events prompting use of money and other assets (e.g. livestock) to "buy votes."

Another distribution problem was failure of the benefits to reach the victims of the wildlife-induced costs or the intended beneficiaries. Responding to question on compensation for wildlife related benefits in the Parliament on 28 July 2005, the then Minister for Natural Resources and Tourism criticised the district councils for using their 25% share of revenues from tourist hunting for (paying) sitting allowances instead of directing it to target communities. Even if some of this money gets to the communities, all villages in the district are rewarded equally regardless of the costs they incur. Under this system, one can barely see the difference between the conservation-related benefits and other handouts given by the government. It was reported that some villages, which do not even know how an elephant look like were equally reaping the benefits.

Exclusion from Conservation initiative(s)

Principally, adequate local support is possible if the benefits are on a large scale enough to reach the majority with regular supply guaranteed (Barrett and Arcese 1995). In western

⁵*Non-rivalrous goods* are goods whose benefits fail to exhibit consumption scarcity i.e. once produced, everyone can benefit from them without diminishing other's enjoyment e.g. roads, classrooms. *Non-excludable goods* – these are benefits which once created, it is very

Serengeti, only 14 out of 126 villages participate in SRCP. Those excluded from the project (hereafter non-SRCP villages) perceived it negatively and regarded it as a government strategy of reinforcing the unpopular 'fences and fines' approach by 'buying' a section of local communities. An elder from Park Nyigoti (one of non-SRCP villages) equated this initiative to colonial system of "divide and rule" aiming at weakening villagers' joint efforts towards their common claims on legitimate rights lost through conservation.

The SRCP initiative was further blamed for inter-village conflicts, creating tensions between the SRCP and non-SRCP villages. The SRCP villagers - regarded by non-SRCP as "betrayers" - were sometimes targeted for revenge in case non-SRCP members were arrested for illegal hunting by Village Game Scouts (VGS) from SRCP villages. For example, the lives of VGS in Iharara and Hunyari villages, in Bunda District, had been threatened by suspected poachers from non-SRCP villages. Another incident was that of setting ablaze a house belonging to Kihumbu VNRMC chairman in 2000. The workable solution would be to extend the benefits to non-beneficiaries. However, this option is unlikely, as the project, like many others, suffers from donor-dependency syndrome and, it is uncertain whether the government will be ready to sustain it (see discussion on donor dependency syndrome). This limited coverage defeats the conservation objective. This suggests that it is an oversight to anticipate success in conservation by changing the attitude of 10% of the communities.

(ii) Poor personality among the civil servants

Public goods donated by the conservation agencies either become the property of local or central governments. Conservation agencies have no say over the staff working in these sectors or institutions. In case a government officer working in "supported institutions" becomes irresponsible, the desired outcomes from the benefits granted may not be realised. For instance, TANAPA supported construction of a dispensary in Mariwanda village, Bunda

difficult or impossible to sanction others from access

District. However, behaviour of the medical personnel had excluded some villagers from the service. He was accused of arrogance, using abusive language to the patients, bribery, pilferage of medicines and vacating offices during the working hours. It was said that sometimes the patients opted to forego this service by remaining at home or consulting the traditional healers. This implies that if the service was intended to win local support, it may not because the target beneficiaries do not access it.

(iii) Failure to access the benefits due to poverty

Where access to wildlife-related benefits requires some cash, those without may be excluded. For example, TANAPA's support in construction of dispensaries may have little value to households, which could not contribute some US\$10 per year for eligibility to medical services as per government's cost sharing policy. Since the service is meant for those with money, then there is little incentive for people who cannot take advantage of the benefits to change their behaviours in favour of conservation.

Poverty was also said to restrict people from access to benefits generated by SRCP's game cropping scheme and TANAPA's support to secondary school. Although the game meat was cheap compared to beef, some villagers still felt that they could hardly afford buying it due to low income. Regarding support to education sector, it was stated that despite knowing its value some people could not benefit fully from it. One of the village officials in Park Nyigoti, Serengeti District, described construction of secondary schools in some of the wards as being "an expensive benefit." He clarified that, by increasing the chances for primary school leavers to join secondary schools, the parents were compelled to pay for school fees, buying uniforms and meeting other requirements. For poor parents, access to this benefit may be limited. It was revealed that illegal hunting was occasionally adopted as a way of securing money to meet these requirements, signifying that this form of benefits was encouraging

rather than halting illegal activities. Previous studies have also indicated that poverty and the need to increase food availability and economic income are major forces behind illegal hunting (Kaltenborn, Nyahongo and Tingstad 2005; Loibooki, et al. 2002).

3.3 Can the future access and control be sufficiently well guaranteed?

In this section I argue that the sustainability of the benefit-based arrangements in Serengeti faces uncertainty due to a number of factors - also common in other projects in Africa. These entail: prevailing flaws, heavy dependency on external sources (donors and tourism industry), population growth and unknown future potentials.

Prevailing flaws on value of the resource and distribution

As observed earlier, the benefit-based approaches seek to induce change of local people's behaviour for the benefit of conservation. If overlooked, the constraints identified under the previous two questions (sections 3.1 and 3.2) may forestall this desire. It is likely that wildlife authorities and donor agencies will abandon the strategies as there will be less justification for them to continue investing on strategies which do not work.

Donor dependency syndrome

NORAD has been supporting SRCP to meet running costs such as vehicle costs, fuels and allowances. In the period between 1998 and 2002, NORAD funding amounted to some US\$ 330,000 annually, but since then the amount has been decreasing gradually as the project was approaching to an end in 2006. Tanzania government was expected to sustain the project after donor pull out. However, government failure to do the same for MBOMIPA and SCP in southern Tanzania following donor pull out in 2003 sounds the warning bells that no miracle will emerge for SRCP. Although inadequate financial capacity (Songorwa 2004b) was

associated with this failure, low government commitment or priority may also account for this scenario. The following quotation from Minutes of the 1994 annual national workshop for wildlife officers in Tanzania indicates reservations (and possibly unwillingness) of the wildlife officials regarding these projects: “Most of the Community Conservation projects in the country are donor initiated and funded. This approach is top-down and the local institutions...and communities are only passengers while the donors are doing steering” (URT 1994, p. 13).

Vulnerability of tourism industry

The tourism industry - another potential source of wildlife-related benefits to communities - is susceptible to forces such as political instability, economic hardship, international politics, terrorism and even natural catastrophes. Some of these forces had had an impact on Tanzania’s tourism industry. For example, civil wars in Rwanda, Burundi and Democratic Republic of Congo, which had produced thousands of refugees in the northwest and western Tanzania, have had a severe negative impact on wildlife species and habitats. The refugees’ activities are linked to over 95% decline in population of 13 large herbivores in Burigi-Biharamulo Game Reserves (TWCM 1991; TWCM 1998). This situation may undermine the potential of an area for game viewing and tourist hunting.

Bombing of American Embassy in Dar es Salaam in August 1998 also affected the country’s tourism industry. Travel agencies and tour companies reported a drastic drop of inquiries about holidaying with some clients who had already booked for safaris calling back to cancel the bookings (Anon. 1998). Ecological factors such as diseases, drought, floods and other natural catastrophes may reduce (or even wipe out) the population of charismatic and suitable wildlife species for hunting (see e.g. EMERCSA, 2002; Morell, 1995; Harder *et al*, 1995) and, therefore, reduce the revenues from game viewing and hunting industries.

Experiences from neighbouring countries also provide good lessons regarding sustainability of benefit-based arrangements. In Zimbabwe, the land reform programme in 2000, and consequently, a decline of country's image internationally and deepening economic and political crisis, had detrimentally impacted the tourism and wildlife sectors. Tourism revenues fell from US\$ 700 million in 1999 to US\$ 71 million in 2003 and over 80% of its large game in private conservancies was poached (ZimConservation, 2004). In Uganda, rebels from the neighbouring Democratic Republic of Congo killed eight tourists at Bwindi Impenetrable National Park in March 1999. This reduced the number of tourists drastically in Bwindi, Mgahinga and Kibale National Parks (Archabald and Naughton-Treves 2001).

Decrease of benefits due to increase of populations and costs

One of the challenges facing Serengeti ecosystem in its western part is its high rate of human population growth (MNRT 1985; URT 1998, 2002). The population growth may have implications on wildlife-related benefits granted to people and, consequently, local support to conservation. The exponential growth of human population reduces the benefits per capita. Further reduction of the benefits (or termination) may erode local support for conservation on the basis of 'no benefits, no conservation' scenario. The 2004 delay of the donor/government to disburse funds to SRCP (October instead of July) and, subsequently failure of the community hunting, epitomise this situation. Some village leaders suspended the anti-poaching patrols conducted by village game scouts, the move, which implicitly meant allowing people to hunt. The leaders justified this move as the right step to assist the starving people.

Along with human, livestock and wildlife populations also increases. More livestock create more demand for grazing land and possibly more conflicts with protected areas. Increase of wildlife population – the most likely scenario due to recent expansion of wildlife

protected areas in the vicinity of villagers' farms and settlements - translates into more costs in terms of livestock depredation, crop damage and wildlife-related accidents. The increase of local costs as a result of success in community conservation programmes have been reported in other East Africa wildlife-rich areas such as areas bordering Kenya's Amboseli National Park (Western 1998) and Tanzania's Selous Game Reserves (Songorwa 1999). The consequences was intensification rather than mitigation of the conflicts.

Future opportunities

The major assumption on which the benefit-based approaches are premised (i.e. 'take the benefits and reciprocate conservation' scenario) puts them at a risk from unknown better potentials. In case new economic potentials prove to be more profitable than the benefits granted, people may go for them regardless of being ecologically detrimental. Warning on risk of Community Based Conservation (CBC) projects Hackel (1999:726) argue convincingly that "...if rural people accepts CBC because of its economic benefits, they may reject it at some point in the future if a better economic alternative is presented."

6. CONCLUSION AND RECOMMENDATIONS

The general conclusion, which can be drawn from this study, is that the benefit-based approaches in Serengeti are fundamentally flawed. Their design and implementation can hardly enhance the value of the wildlife resource to local people, cannot ensure equity access and cannot guarantee sustainability of the benefits to local communities. Therefore, the current benefits are less effective in inspiring sustainable conservation behaviours. This, however, does not mean that the conservationists should abandon the benefit-based approaches and return to the barriers i.e. 'fences and fines' approach. More comprehensive and integrated study that will offer more innovative and effective options in view of making

the initiatives more plausible is imperative. The options should seek to increase more opportunities that will divert the communities from heavy reliance on wildlife species and habitats for survival. The following lessons are worth addressing in seeking for viable solutions:

- Misunderstanding of how local people value their resources and prioritise their needs may undermine the objectives of the conservation initiatives i.e. to induce change of behaviour. If benefits received cannot meet people's felt needs and their priorities, they (people) will continue to obtain the resources illegally.
- If a value of a resource is to be appreciated by local people, the benefits of keeping the resource should exceed the costs it causes and be able to reduce the level of poverty. Similarly, the benefits of maintaining the resource must exceed those generated by alternative uses, which may detrimentally affect the resource.
- Lack of appropriate mechanisms to reward individual behaviours and minimise the systems that exclude some individuals/households/groups from access to resources may obstruct the desire of inducing positive conservation behaviours to local people.
- Heavy reliance on external source (donors and tourism) in granting benefits to local people may risk sustainability of the benefit-based approaches and, therefore, undermine conservation objectives
- Wrong definition of the objectives of the conservation initiatives may similarly undermine the goals of conservation.
- Failure to consider the demographic factors and social consequences of improved conservation may minimise the benefits, increase the costs and, therefore, intensify the conflicts at the expense of resources.

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