

Perceptions of African Indigenous Hunting Communities in Tanzania on Use of Game Meat Resources

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ABSTRACT The paper employed a participatory approach to investigate the perceptions of the Wandorobo, an indigenous hunting community in Tanzania, on the use of wild meat resources. It was found that hunting for game meat and other wildlife resources played a vital part in the livelihood of the Wandorobo. Division of labour was on gender and age. Men and boys did most of the hunting; and women, including girls, were responsible for the processing of the game meat for domestic use and for sale. Sustainable harvesting of the wildlife resources can be achieved through supporting alternative sources of livelihood including agriculture; conservation policies should be made clearer to the people; and community representatives should be incorporated into the wildlife management policy planning and implementation to promote a sense of ownership of measures.

INTRODUCTION

In his discussion on the importance of wild-food resources in Africa, both flora and fauna, Brown (2009) emphasizes the necessity of increasing research on these resources, partly owing to the growing food and nutritional insecurity facing poor agricultural communities as a result of various factors, including climate change. Conant (2008) shows that, historically, wild plants and animals, including insects, were sole dietary components for hunter-gatherer and forager cultures; however, today they remain key to many African rural communities. This study argues further that an investigation into the role of wild-food resources, especially wild animals as food, is important in order to establish the diverse views with regard to their uses among different stakeholders, especially those who depend on them for sustainable livelihood. Many studies have been undertaken on wild-food plants, however, limited studies have been conducted on wild animals as food, particularly from the perspective of the hunting communities. Ditchburn, (2010) explains that the views of conservationists are already widely known. They are aware that most rural communities, particularly the hunter-gatherer communities, may have traditional ownership and access rights to their natural resources which must be respected; however, they are also concerned with the sustainability of these natural resources. Their depletion is seen to exacerbate poverty; a large number of people in the rural areas depending on these resources for a livelihood.

Wilke (2010) elaborates that the intensity of some of the wildlife usage has increased over time owing to changing technology, increasing population, increasing urbanization associated with increased income and standard of living, and growing preference for wild foods, etc. As a result of the complexity of the issues, conservationists are faced with the problem of identifying the level of wild-foods harvest that would ensure the ecological balance, meet the household and community food security, nutritional, health, economic, and cultural needs of the people, and still be considered sustainable. Robinson (2008) adds that, no matter how important game is to the African local communities, if the rate of extraction surpasses the natural regeneration rate, there is bound to be a problem. This implies that, not only would hunters have to travel long distances and use more time and energy in chasing animals, the game population would become extinct, resulting in what conservationists call “the empty forest syndrome”. To this end, there is need for a better understanding of the concept of sustainability in the use of wildlife resources in African communities. It is herein that the challenge lies of whether the existing rate of hunting would allow the animals to continue playing their ecological role, maintaining a balanced ecosystem. The decrease in wildlife resources has been acknowledged as a major concern, not only by conservationists, but also by some local communities themselves (Cowlshaw 2007).

Saguti (2011) indicates that in Tanzania game is becoming increasingly important for maintain-

ing standards of living, as a source of protein, and of cash income. As a result of this, the illegal wild-meat trade is fast developing in the urban areas of the country, driven by demand. Furthermore, because many of the animal species targeted for game are highly frugivorous, depletion has had adverse effects on regeneration. Many areas are increasingly becoming “empty forests and bushes”. This is because most rural communities in Tanzania are very remote; therefore, the hunting goes unseen. It is thus unlikely that any estimates of all wild animals killed for meat are accurate.

Theoretical Overview

As already indicated above, there are various positions with regard to the practice of wildlife hunting for meat within and outside Tanzania. There are those who support the practice by arguing that the hunting of wildlife for meat is mostly for subsistence consumption. It is only occasionally that the surplus is sold at rural markets thus obtaining those items that could not be produced locally. Moreover, the use of crude equipment for hunting supports their sustainability. Furthermore, the hunting is also conducted for cultural reasons. It supplies the social function of integrating young men into manhood. There are some taboos and cultural practices which promote wildlife conservation by prohibiting the hunting of certain wildlife species (Meeuwing 2002). They are also against the view that household reliance on wildlife resources is a primary indicator of impending famine and poverty. This is owing to the observation that in most African rural communities, the love of game is legendary. It is a common sight to see young men, regardless of social class or season of year, ‘excavating’ large expanses of land in the quest for trapping wild animals, both large and small, such as rats, rabbits, porcupines, antelopes, etc. for meat.

This study also takes the view that empirical evidence on the significance of game meat in the household economy in African rural communities is relatively limited. Moreover, although households living in extreme poverty are believed to be dependent on wildlife resources such as meat for food, nutrition and income needs, recent research has questioned this view; the interactions between wealth and the use of wildlife resources for livelihood being more com-

plex than seen at first glance. A number of factors must be taken into consideration. The hunting of wildlife for meat and other uses has been an integral part of African culture. The practice has extensively been used for centuries as a coping and survival strategy at different intensities, in areas such as food security and nutritional balance, employment, and cash income, ceremonial and spiritual cleansing, and religious practice (Brown 2006).

The study is based on the argument that, although various studies are available on wild food resources including hunting wildlife for meat, limited investigations have been conducted on the perceptions of the African indigenous hunting communities on the use of wild-meat resources for sustainable livelihood. It is from this consideration that the study investigated the perceptions of the Wandorobo as an African indigenous hunting and nomadic community in Tanzania. Despite some of them turning to crop farming, hunting of wildlife for food and income generation still remain the principal source of livelihood. The main questions investigated included: What are the community perceptions on the role of wildlife in household and community livelihood? What are their perceptions of wildlife hunting for sustainable livelihood and on government policy of wildlife conservation?

The Wandorobo community lives along the Pangani River in the Tanga region of Tanzania. The name is an umbrella term for several unrelated hunter-gatherer people found in Tanzania and Kenya. Brown (2006) indicates that in 2000 the population of Wandorobo in Tanzania was 5,268 people. Over the past 150 years, some of the Wandorobo have been assimilated into the pastoralist economy of neighbouring peoples, mostly the Wamaasai. In the process, some have abandoned their indigenous cultural practices, including languages. However, most of them still live by hunting of wild animals as a source of food, clothing, religious rituals, medicine, etc.

On the issue of socio-cultural lifestyle, Sarawak (2006) shows that the Wandorobo are one of the last actual hunter-gatherer peoples left on the African savanna. Besides hunting, they collect honey, which involves ‘steaming’ out the bees, making it possible for the gatherer to reach into the hive and grab the honey. They drink beer which they make from honey. As a result of competition for land with the Wamaasai, some

have recently turned to farming instead of remaining nomadic. Brown (2006) states that the Wandorobo in Tanzania used to cover the Wamaasai Steppe, including the Pangani River Valley, however, nowadays agriculture, poaching, and other hunters, have diminished the natural resources, forcing the Wandorobo into bitter rivalry with the Wamaasai over land and water. Some of the Wandorobo, especially women, are slowly becoming involved in agricultural practices as an alternative occupation to wildlife hunting and gathering.

METHODOLOGY

The investigation into the perceptions of indigenous African hunting communities in Tanzania on the use of wild-meat resources, with special reference to the Wandorobo, followed participatory and case-study approaches. This was in order to offer an in-depth understanding of the research problem from the perspective of the study community itself, as the knowledgeable and practitioners. Cooke and Kothari (2009) explain participatory research as a type of research in which the members of the study population are treated as equal partners in the research process. This is the most appropriate ethical way of proceeding, for various reasons, when the researcher is of a different cultural background from the population being studied. First, to remain ethical, a research study must provide more benefit than harm to the population being studied. The best way of ensuring this is to consult with that study community. Second, designing effective research instruments requires sufficient understanding of a culture to know which questions are potentially sensitive, which are easily misunderstood or have special meaning, and so on. The best cultural experts on the target community are the community members. A research is participatory when the community members are active in designing and implementing the research, when they have invested in the work, when they are involved in all stages of the work, from planning to implementation, to results; when they are happy with what was conducted, and the way in which it was conducted; and when they feel that they were treated respectfully, and as valued members of the research team.

Denzin (2008) indicates that a case-study research method enables a researcher to closely

examine the data within a specific context. In most cases, a case-study method selects a small geographical area or a very limited number of individuals as the subjects under study. Yin (2007) defines the case-study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.

The community was composed of 15 households. Although the size of the study community was small, all the heads of household who were male participated in the study. Arora (2010) views a household as the basic residential unit in which economic production, consumption, inheritance, child-rearing, and shelter are organized and carried out. "The household" may or may not be synonymous with family. The term usually refers to all individuals who live in the same dwelling, whereas the community leaders were defined in terms of a resident kinship group carrying out domestic functions.

The average household size in the study community was 6 people. Over 60% of the household members were female, ranging from 5 to 60 years of age. In collaboration with the local community leaders, information regarding hunting was obtained directly from active hunters within the community. A purposive sample of 10 well-known hunters (all men, in the age group of 20-50 years) was obtained for in-depth interviews on hunting techniques, animal species hunted, including those prohibited by traditional laws and taboos. Creswell (2004) defines a purposive sample as a non-representative subset of some larger population constructed to serve a very specific need or purpose. Purposive sampling is particularly relevant when the researcher is concerned with exploring the universe, and understanding the audience. This means that using her/his commonsense and best judgment in choosing the most appropriate habitations, and meeting the correct number of opposite people for the purpose of the study.

Data on the study community were collected from both primary and secondary sources. The study was mostly qualitative. Denzin (2008) looks at a qualitative research as a method of inquiry employed in many different academic disciplines, traditionally in the social sciences. Qualitative researchers aim to gather an in-depth understanding of human behaviour, and the rea-

sons governing such behaviour. According to him, the qualitative method investigates the *why* and *how* of decision-making, not merely the *what*, *where*, and *when*. Hence smaller, but focused samples, are more often needed than large samples. The distinctive qualitative data-collection methods are used for focus groups and key informant interviews. A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes apropos a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting, in which participants are free to talk with other group members (Creswell 2004).

In order to cross-reference the various sources of information, a combination of data-collection methods was employed, namely, interviews, focus-group discussions, direct observation, and so on. A questionnaire in the local language was administered in order to obtain both qualitative and quantitative information through a combination of closed and open-ended questions. Secondary data were collected through an examination of various research documents and literature on the history and cultural background of the Wandorobo. The questions asked of the interviewees included the following:

1. Do you eat game?
2. What type of animals do you usually hunt for game meat?
3. What types of animal do you as a household eat most regularly?
4. What other types of meat do you eat?
5. What type of animals is not eaten by the household? Give reason/s.
6. How often does your household eat game meat?
7. What role does wildlife, especially the hunting of game meat; play in the livelihood of the household and community?
8. Does the subsistence consumption of wildlife by the local people affect the wildlife sustainability in the community?
9. What traditional community rules do you have in place to regulate the hunting and use of wildlife?

Data was collected in the local language using research assistants from the study community; data was translated into English. This enabled the respondents included in the research process to express their views freely. While content analysis was employed in analyzing and

synthesizing of various qualitative data, the quantitative data were subjected to descriptive statistical analysis (De Sola Pool 2009).

RESULTS AND DISCUSSION

Socio-cultural and Economic Characteristics of the Study Community

The study found that all the heads of household were males in the age group of 27 years and above. The average household size was 6 persons, all related by blood. According to interviews, the oldest head of household was about 85 years of age. This was estimated using traditional community historical records. Over 60% of the household were female, ranging from 5 to 60 years of age. Sixty-two per cent (62%) of the females who were in the age group of 16 to 45 years of age were married. Only 57% of the males in this age group were married. All the wildlife hunting for meat was conducted by men, usually in the age group of 17-50 years. Eighty-seven per cent (87%) of the professional hunters were married.

An examination of secondary sources and focus group discussions with community knowledge-holders and practitioners revealed that, traditionally, the Wandorobo lived solely by hunting. The Wandorobo in Tanzania speak a dialect of Wamaasai, as do their Wamaasai neighbours. However, the Wamaasai have a culture, language, and physique Hamitic in origin, whereas the Wandorobo have features that are more negroid (Stanley 2005). Observation of the dwellings of the Wandorobo showed that they closely resembled those of the Bambuti pygmies of Ituri in the Congo. Homes were made by placing the ends of supple sticks into the ground. The upper ends of the sticks were positioned so as to form a dome, which was thatched with broad foliage. The simplicity of the dwelling was attributed by the community knowledge-holders to the migratory nature of the people. Dwellings were quickly constructed and frequently abandoned when they had to follow game or find a new water-source.

Other cultural traits of the Wandorobo were similar to those of other African hunting cultures, such as the San people of Southern Africa (Meeuwig 2010). Interviews with community knowledge-holders indicated that they had only recently started practising a little agriculture.

They had no domestic animals apart from dogs. Their leather clothing was of a simple kind, consisting of a piece of hide. Modern clothes were also increasingly being used. Fire was made by twirling sticks within a hollow on another stick. According to Sarawak (2006) the practise of placing hives in trees was technologically more advanced than that of the Ituri Pygmies of the Congo forests, who merely collected the honey from the nests of wild bees. The Wandorobo had few crafts, and did not make objects of iron, though they possessed iron arrow-points, spears, and swords. Interviews with community knowledge holders revealed that these iron objects, along with shields, were obtained from the Wamaasai.

In the area of traditional governance and leadership, focus-group discussions and interviews revealed that a Mndorobo chief was elected by a council of elders. The office was not hereditary; a council of elders was the responsible governing body. On the social organization, the Wandorobo were influenced by the Wamaasai. The males were traditionally divided into boys, warriors, and old men. At the time of circumcision a boy entered the warrior class.

The study found that hunting wildlife for meat was one of the major socio-economic activities sustaining the livelihood of more than 70% of the respondent households in the study community. This was achieved throughout the year; hunters did not have any particular period for wildlife hunting activities. However, there were seasons and periods that were more favourable than others. The rainy season was the period in which more hunting activities were conducted, compared with the dry season. This was because during the rainy season, most animals came out to look for food.

The respondent professional hunters indicated that certain hunting methods and techniques such as using snares were more effective in the wet season, it being easier at that time to identify the animal path in the thick undergrowth. Although hunting using guns was conducted throughout the year, hunting by shooting was more common during the rainy seasons because the wet leaf litter deadened the sound of the approaching hunter; hunting increased in the dry season owing to burning. This was considered an “economizer of hunting energy” in that it flushed out the animals. In terms of equipment, the following hunting instruments and techniques were commonly used:

- ♦ *Use of Traps* – Traps deployed for animals varied, depending on the animal being targeted. Examples of traps used included neck-traps (for small animals), waist-traps (medium-sized animals), and foot-traps, such as shallow pits (for larger animals, such as buffalo). Trapping with the use of a wire snare was widely practised thanks to its affordability and reliability. It was stated that the problem with the use of snares was that these traps were indiscriminate in game caught;
 - ♦ *Use of Poison* –For catching prey easily, some hunters used various forms of poison, both traditional poisons from various wild plants, insects, and so on, as well as modern poisonous chemicals such as DDT. However, animals caught this way were considered very harmful to consume;
 - ♦ *Use of Guns* – Traditional and modern types of gun such as shotguns and rifles were increasingly being used in hunting larger animal species. The respondent hunters stated that the use of modern guns had effected ease of hunting, especially of the canopy-dwelling species. Shotguns and rifles could also kill over a greater range; and had contributed to an increase in the rate of wild animals killed;
 - ♦ *Use of Nets* – These were used in catching animals. Nets were considered much better equipment as they facilitated selective catching;
 - ♦ *Use of Spears* – The traditional use of spears, along with dogs, though fast disappearing, was still being practised;
 - ♦ *Use of Flashlights* –Flashlights increased the efficiency of hunting at night;
 - ♦ *Access to Bicycles*– Easy access to bicycles has now eased the movement to and from hunting areas for the hunters. Bicycles have also eased the transportation of wildlife products to their end destinations.
- Concerning the social division of labour, hunting wildlife for meat was a predominantly male activity. Women were generally responsible for processing the game meat (that is smoking and sun-drying) and for processing this into various products including the animal skins for clothing. The collection of insects was carried out by both men and women. Men and boys were also responsible for wild honey collection. The women and girls were responsible for con-

verting the honey into various products. Spiritually, as with the Wamaasai, the Wandorobo did not practise burial - they left their dead in the bush to be devoured by hyenas.

The study wanted to establish the levels of formal education in the study community. It was found that none of the female respondents had formal education. Only 2% of the professional hunters had Grade 4 (primary school) education. However, all the respondents, both female and male, demonstrated a wide knowledge, awareness and experience of the different types of wildlife (plants, animals, insects, birds, and so on) found in the local environment. This was because they, as hunters and gatherers, depended on this foodstuff for survival. The respondent women showed a wide knowledge of the local plants species, while men showed a wide knowledge of local wild animals and birds. This knowledge demonstrated the gender division of labour within the community. It was also found that Wandorobo children were now receiving formal education in the neighbouring villages along the Pangani River. The following section discusses the community perceptions on the role of wildlife in household and community livelihood.

Community Perceptions on the Role of Wildlife in Household and Community Livelihood

Household and community livelihood is an important aspect of every society's socio-economic and cultural systems. The study wished to establish from the respondents the role of wildlife, especially the hunting of game for household and community livelihood. The results are presented and discussed below: Thirty-five per cent (35%) of the respondents stated that the subsistence consumption of wildlife by the local people did not affect the wildlife sustainability. There were traditional community regulations including taboos which regulated hunting and use of wildlife; 53 % of the respondents had the opinion that the struggle for survival amidst abject poverty, and the changing environmental conditions limited economic alternatives, promoted the consumption of wildlife resources, especially game; 67% of the respondents had the opinion that the increase in population in the area had been matched by growing demand for game meat; 72% indicated that game meat was less expensive, a more accessible source of protein than meat from domesticated

animals obtained from neighbouring communities. The affordability and accessibility resulted in considerable household savings; 85% of the respondents who traded in game meat had the opinion that preferences for game meat over domestic meat was based on the perception that game meat was considered delicious and superior to domesticated animals. More than 90% of the respondent households indicated that they ate game meat almost daily.

Forty-six per cent (46%) of the respondents indicated that wildlife had spiritual, mental, and physical significance. It was a source of household and community medicine, and traditional healing. Wildlife including game meat was believed, traditionally, to have spiritual healing powers. One respondent hunter stated that some of the body parts of the hunted animals were useful in the preparation of medicinal concoctions. Traditional healers and other community knowledge-holders used different animal parts such as meat, hair, skin, tail, bones, teeth, fats, glands, and faecal pellets for the treatment of a wide range of mental, physical, and pre- and post-natal illnesses. For example, python fat was said to be medicinal. The fat and oil of a python were used as a pain-reliever and soothing balm, although it was also believed to be harmful and injurious to humans when swallowed. The following section discusses the indigenous and modern methods and techniques used for hunting wild animals by the study community.

Marketing of Game Meat

During focus group discussions and in-depth interviews with the community knowledge-holders, it was indicated that socio-economic changes, including the introduction of the western way of life and western goods has transformed the traditional life of the Wandorobo, enabling game meat to be a commodity traded on the market. Besides being a traditional source of food security and nutrition, wild meat extracts were increasingly becoming an important source of household income. A previous study by Muya (2009) showed that in 2002 the trade in game meat constituted less than 10% of the animals caught and sold. In 2008 the figure had risen to 40%. The average income per month from the animals sold at the time of this study (2012) was Tanzanian Shillings five thousand

(Tsh. 5000, that is about US\$ 3 per month). The money was used for the purchase of various items which were not produced by the households, such as clothing, soap, paraffin, maize flour, and so on. The study revealed that the trade in wildlife products, including fresh and dried game meat, was carried out by both men and women; brokering was a common practice in the harvest and trade in game meat among the Wandorobo; the selling of game meat on the roadside and at village markets was performed by both men and women.

The study revealed that the game meat harvested by the Wandorobo created new sources of income both within and outside the study community. The fresh or dried meat was often sold to village collectors (wholesale traders) from neighbouring villages including some urban areas, who in turn sold the meat to urban retail traders. Sometimes, however, game meat was sold directly by the producers at the roadside or to roadside sellers. Some of the Wandorobo women were also gradually becoming involved in the sale of wild meat, both fresh and dried. For some, this was becoming an important source of livelihood. An interview with a farmer, who was also a hunter, in a neighbouring village, showed that he earned more income from the game meat trade than from his farming activities. The following section examines the respondent's views on wildlife conservation.

Local Community Members' Perceptions on Wildlife Hunting and Conservation of Wildlife

The study wished to learn the respondent community members' views with regard to government conservation measures which declared some areas protected, so as to prevent wildlife depletion. It was found that more than seventy per cent (>70%) of the respondent heads of households had the opinion that the protected areas were their original lands; and they had the right to use them. From an historical and a cultural perspective, they did not agree with some of the conservationists' views and government policy regulations, such as relocation and banning the hunting of wildlife. They wished to continue with their hunting and gathering activities as they had done in the past. During focus-group discussions, some community members aired the view that wild-animal species cannot be totally eliminated in the bush using the indigenous ways of hunting.

Because it now took a hunter a longer time to reach the bush did not mean that animals were no longer in the bush. They also argued that the animals that were no longer seen, were not necessarily extinct; rather the hunting activities had caused them to move further away, especially from the noise of modern weapons and from other modern human activities in the area. They blamed people from outside who used these modern hunting weapons and methods. Government should focus on these people.

In spite of the above opinion, 15% of the respondent community members believed that some animals had disappeared and had probably become extinct. They also blamed people from outside who came to hunt in the area with modern weapons.

However, during focus-group discussions, there was no clear perspective on whether people actually understood the government policy documents on conservation. For instance, one of the respondent hunters stated that most of the community members did not understand clearly the government policies on conservation. They only experience harassment from government officials who came to enforce the conservation measures. They expressed the view that the government officials have always promised to assist the community members with finding alternative sources of livelihood. These promises have not been fulfilled. Nothing has been done to assist the community members who at the same time were restricted from hunting wildlife for a livelihood.

However, the respondents agreed that the sustainable exploitation of the wildlife resources was advantageous for the future of the community. This was based on their own traditional community realization that wildlife conservation will enable them to have sufficient game meat to eat; as the conservation practices allowed the animals and other wildlife resources to reproduce. Moreover, the conservation of the wildlife resources will make it possible for their children and the generations yet unborn to see and use these natural resources; this will translate into sustainability and continuity of cultural practices, especially where parts or a whole animal may be required for traditional rituals and rites. For instance, in traditional medicine and rites of passage from one social status to another, various animal parts still played important roles in the contemporary community.

For example, the long-term influence of social beliefs and taboos was revealed during focus group discussions. Alexander (2010) defines a taboo as “a prohibition imposed by a social custom or as a protective measure”. She elaborates that taboos represent informal institutions based on cultural norms. However, as with many other aspects of culture, they tend to be ignored in wildlife management, despite biodiversity hotspots being frequently associated with indigenous communities in which many taboos occur. Taboos, as expressive notions representing informal institutions, tend to be decentralized, and self-enforced in these communities. They are more common in communities with pooled or communal resources that can exclude outsiders and thus their use may be regulated.

The study revealed that there were specific animals that were neither killed nor eaten by the Wandorobo. However, the extent to which the ‘idea of forbidden animal’ may enhance wildlife management was problematic. The community members were not the only people hunting wild animals in the area. Even the animal species supposed to be in abundance owing to the existence of some social beliefs or taboos within the community were targeted by outsiders.

Another important factor which emerged from the discussions on wildlife conservation was peoples’ taste, especially dislike of meat from certain animal species. It is on this basis that Frazer (2008) argues that adhering to social beliefs and taboos may actually have a long-term positive influence on wildlife management systems, if this is sustained, refined, or integrated into the body of modern wildlife conservation protection mechanisms. The study revealed that, even though some of the community members expressed awareness of the government conservation policies in practice, they seemed to agree that the implementation of the policies was not inclusive. The government authorities responsible for conservation efforts excluded the local leadership and community members in general. The communities realized that the conservation policies could only succeed if there was a wide consultation between the community leaders and the government authorities.

Some of the community members stated that because the government and its officials had not provided them with alternative sources of livelihood, people would continue hunting game. They added that wildlife hunting should be al-

lowed to some extent, rather than be banned. This was an indication of the level of importance that the people attached to the wildlife resources for their livelihood. It could be argued that community members were not very clear on the intentions of the government in restricting the harvesting of wildlife resources, which in the social and cultural space were deemed theirs. Previous studies, such as one conducted by Conant (2009) suggests that innovative strategies should be developed in cooperation with the local communities in conservation areas so as to cultivate a sense of resource-ownership and stewardship among community members. This requires well thought-out planning, long-term commitment, and thorough, practically oriented research. Barnes (2010) adds that coordinated efforts are needed, involving diverse stakeholders such as hunters, consumers, traders, development agencies, researchers, policymakers, and so on, moving away from the “one tool for all approach” theory.

CONCLUSION

The study is based on the premise that the hunting of wildlife for meat plays a vital role in the livelihood of the Wandorobo living along the Pangani River in Tanzania. It is a cultural practice which has been used for centuries as a coping and survival strategy for food security, ceremonies and religion. Hunting was done throughout the year; hunters did not have any particular period for wildlife hunting activities. However, there were seasons and periods that were more favourable than others. The rainy season was the period in which more hunting activities were conducted, compared with the dry season. This was because during the rainy season, most animals came out to look for food.

Certain hunting methods and techniques such as using snares were more effective in the wet season as it was easier at that time to identify the animal path in the thick undergrowth. Although hunting using guns was conducted throughout the year, hunting by shooting was more common during the rainy seasons because the wet leaf litter deadened the sound of the approaching hunter; hunting increased in the dry season owing to burning. This was considered an “economizer of hunting energy” in that it flushed out the animals. In terms of equipment, the following hunting instruments and

techniques were commonly used: traps, poison, guns, nets, spears, flashlights, etc.

Concerning the social division of labour, hunting wildlife for meat was a predominantly male activity. Women were generally responsible for processing the game meat into various products including the animal skins for clothing. The collection of insects was carried out by both men and women. Men and boys were also responsible for wild honey collection. The women and girls were responsible for converting the honey into various products. Spiritually, as with their neighbours, the Wamaasai, the Wandorobo did not practice burial - they left their dead in the bush to be devoured by hyenas.

On the levels of formal education in the study community, it was found that none of the female respondents had formal education. However, in spite of this they demonstrated a wide knowledge, awareness and experience of the different types of wildlife (plants, animals, insects, birds, and so on) found in the local environment. This was because they depended on this foodstuff for survival. Women showed a wide knowledge of the local plants species, while men showed a wide knowledge of local wild animals and birds. This knowledge differentiation demonstrated the gender division of labour within the community.

On the issue of conservation, the respondents acknowledged that the promotion of sustainable exploitation of the wildlife resources is advantageous for the future of the community because this will contribute to the provision of wildlife resources for food security. Conservation practices will allow the animals and other wildlife resources to reproduce. Moreover, the conservation of the wildlife resources will make it possible for the children within the community, and the generations yet unborn to see and use these natural resources. This will also translate to sustainability and continuity of cultural practices. The existence of local beliefs and taboos related to wildlife harvesting played a significant role in wildlife conservation. This should be integrated into current conservation efforts.

RECOMMENDATIONS

In order to achieve sustainable harvesting of the wildlife resources, especially game meat,

the following recommendations are made from the perspective of the community members:

- ♦ The already alternative sources of livelihood engaged by the people such as agriculture, trading, craftwork, etc. must be supported by the government as part of promoting small-scale ventures and micro-finance outlets for the people;
- ♦ The methods and techniques of harvesting wildlife, especially the use of poisons and traps should be discouraged through very strong penalties;
- ♦ The government conservation policies and their importance should continuously be made clearer to the people and communities;
- ♦ Similarly, local community representatives should be incorporated into the wildlife management policies or advisory and implementation committees in order to promote a sense of community ownership of the policy measures; and
- ♦ Research activities within the local communities should be participatory, involving community members in the research process, so that the research recommendations become relevant to the needs of the communities.

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