

PEOPLE'S PERCEPTIONS ON CONSERVATION OPTIONS AND USE VALUE OF A PROTECTED AREA IN GARHWAL HIMALAYA, INDIA

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ABSTRACT

The present study was carried out in parts of a protected area of Garhwal Himalaya, namely, Kedarnath Wildlife Sanctuary (KWLS). The main aim of the study was to gather and analyze information from the sanctuary dwellers on conservation of natural resources and its value focusing on the needs of local inhabitants. Ninety three respondents of different age groups from two villages, one located within and the other on the fringe of the sanctuary, were considered for analysis. The respondent's opinions varied with regard to different conservation issues and their perception towards conservation and the value of wild animals, plants and wildlife sanctuary. Sixty (60%) percent of the respondents considered Kedarnath Wildlife Sanctuary (KWLS) as an effective mechanism in the conservation of flora and fauna while 71% said that local communities contributed much more in conservation efforts prior to declaration of it as a wildlife sanctuary. Fifty seven (57%) percent of respondents think that being a sacred area any kind of disrespect around the vicinity of temple will make deity unhappy and 22% of respondents were of the opinion that the impact as a result of irregularities in climatic conditions can be checked by conserving plant resources. Sixty percent respondents reported damage to agricultural crops by wild animals.

Key words: Perception, Protected area, Respondents, Wildlife Sanctuary.

Introduction

Local perception refers to local people's attitude and understandings that reflect their routine way of life, as well as their shared expectations. All societies possess a substantial body of beliefs, knowledge and practices built around their everyday life experiences and their surrounding environment. This local knowledge is handed down from one generation to the next, but individual men and women in each generation adapt and add to this body of knowledge in a constant adjustment to changing socio-economic and environmental conditions. People who live in or near forests have a deep understanding of natural resource management (Sekhar, 2003). The ecological importance of such local knowledge has been widely acknowledged (Kumar, 2002; Logan and Moseley, 2002). When PAs are established, local communities often have to change their behaviour, as natural resources they were formerly using may become off-limits (Stevens, 1997). Conflicts may arise as a result of restrictions on natural resource use, as well as from forceful evictions or other negative relations with PA staff, lack of resident participation in conservation, and the absence of open communication and full disclosure of PA related information (Hough, 1988). In addition, cattle lifting, crop damage and casualties to human being are the problems that locals

have to bear living in and around protected areas. Response to conflict is manifested by a range of behaviours; from local expressions of anti-PA sentiments to intentional fire in PAs and threats of or actual bodily harm to PA staff (Ite 1996; Brandon *et al.*, 1998; Tello *et al.*, 1998; Peters, 1999). PA managers face the dilemma of managing biodiversity within their jurisdiction and taking care of local community interests and resource needs. The aim of the present study was to gather the information regarding the opinions and perceptions of people about conservation and the value of wildlife sanctuary, wild animals and plant resources in the Kedarnath Wildlife Sanctuary.

Materials and Methods

The study was carried out in Madhmeshwar area, which is the interior part of Kedarnath Wildlife Sanctuary in Western Himalaya, Uttarakhand India located between the coordinates 30° 35' 42" - 30° 38' 12" N, 79° 10' 00" - 79° 13' 00" E. Kedarnath Wildlife Sanctuary, established in 1972, is situated in the north-eastern part of Garhwal Himalaya and falls under the IUCN management Category IV (Managed Nature Reserve) in the Bio-geographical Province 2.38.12 of Himalayan highlands. The Kedarnath Wildlife Sanctuary (KWLS) is one of the largest protected areas (975 km²) in the Garhwal Himalaya located in Chamoli-Rudraprayag

Perception of local people degrade the declaration of wild life Sanctuaries as effective mechanism in conservation of flora and fauna but consider contribution of local communities is more important.

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districts of Uttarakhand (Singh and Rawat, 2011). The area covered by the Sanctuary is 97517.80 ha (25293.70 ha in Chamoli district and 72224.10 ha in Rudrapur district). The sanctuary lies in the upper catchment of the Alaknanda and Mandakini Rivers, which are major tributaries of Ganges. The sanctuary comprises a broad range of altitudinal gradients from nearly 800 m in the lower part which experiences sub-montane climate to almost 6000 m asl forming the Great Himalayan range, including alpine regions. The area receives 300 cm of annual precipitation of which the rainy months (June-August) contribute approximately 60% of the total rainfall. The relative humidity varies from 35 to 85% annually. There is moderate to heavy snowfall during December-February, even in low-altitude areas. The mean maximum temperature varies between 4°C (January) and 33.5°C (June).

Perceptions regarding conservation and the value of wild animals, plants and wildlife sanctuary were discussed with local inhabitants. A total of 93 respondents were selected randomly from two villages - Gundhaar and Ransi. Gundhaar is situated inside the sanctuary with 42 households. The total human population of this village was 242 including 115 male and 127 female. The village Ransi is situated at the fringe of sanctuary with a total number of households 119 and human population of 580 comprising of 274 male and 306 female. More than 10% of total population was selected as respondents for questionnaire survey. A well structured questionnaire was prepared covering different aspects of perception regarding conservation and its value among the locals. Both formal and informal discussions were carried out covering different age groups, categorized as 20-35, 36-50 and above 50. Both genders and mostly elders were involved in the interview process.

Results

The respondents were categorized into three age groups viz., 20-35 (19.35%), 36-50 (32.26%) and above 50 (48.39%). The respondents were of different opinions with regards to different conservation issues and their perception towards conservation. Values of wild animals, plants and wildlife sanctuary also differed widely.

Only 73% of respondents were having an idea of wildlife sanctuary, while 27 % of respondents were not aware of the term sanctuary. When asked about the idea of area of KWLS, 24% of respondents were having knowledge about the area of KWLS while 76% of the respondents were having no clue. 60% of persons interviewed were of the opinion that KWLS is effective in conservation of flora and fauna while 29% of respondents did not consider KWLS effective in

conservation and 11% of respondents did not have any idea. 29% of respondents were of the opinion that KWLS having the status of a protected area is more suitable for conservation as compared to territorial or locally managed institutions, whereas, majority of respondents (71%) were of the opinion that locally managed institutions are more effective in conservation as compared to KWLS. The respondents when asked about the rights and concession on grazing and collection of fuel wood and fodder, 94% of people said that they do not have any right and concession on grazing and collection of fuel wood and fodder while 6% of people were having no idea on the subject, but 55% of respondents were collecting NTFPs from sanctuary area. Only 40% of respondents were aware about WPA (Wildlife Protection Act) and FCA (Forest Conservation Act). 60% of respondents did not know about WPA and FCA while 51% of people were of the opinion that there will be no remarkable change in conservation by implementing these Acts strictly. The respondents were asked whether tourists/pilgrims and other visitors to the sanctuary area follow the rules and regulation set by KWLS, only 32% of people among respondents said yes, while 55% respondents said no and rest 13% were having no idea. Majority of respondents (71%) said local communities were involved more in conservation efforts prior to declaration of wildlife sanctuary while 24% of respondents said the participation of local communities in conservation is more after declaration of wildlife sanctuary and 5% of respondents were having no idea. Only 38% of respondents agreed when asked whether the Madhmeshwar temple is playing any role directly or indirectly in conservation of resources in its vicinity while 46% said no and 16% of respondents were having no idea. All the respondents (100%) said that they do not accrue any benefit of being the resident of protected area, among which 69% of respondents said that construction of roads/developmental activities inside the sanctuary will put less stress on utilization of available resources inside KWLS and only 31% of respondents said developmental activities will put pressure on the resources of KWLS. Majority of respondents (82%) were against the formulation of sanctuary in the area and only 18% were in favour of sanctuary (Table 1. Q1 - 14).

Sixty percent 60% respondents said that there is damage to agricultural crops by wild animals followed by killing of domestic animals 42% and only 5% of the respondents said that wild animals are threat to human life. When asked about the preference of local institutions over sanctuary in effective conservation by local people, 52% of respondents said that involvement

Table 1 : Perception of people regarding conservation and its value in KWLS.

Q. no.	Questions	Yes (%)	No (%)	Do not know (%)
1	Do you have any idea about existence of KWLS	73	27	-
2	Do you have any idea about area of KWLS	24	76	-
3	Do you think that KWLS area is effective in conservation of flora and fauna	60	29	11
4	Do you think KWLS is more suitable for conservation as compared to local managed institutions?	29	71	-
5	Do you have rights for grazing and collection of fuelwood and fodder?	-	94	6
6	Do you collect NTFP's from sanctuary area	55	45	-
7	Do you know about Wildlife Protection Act and Forest Conservation Act	40	60	-
8	Do you think the implementation of various Acts (Wildlife Protection Act and Forest Conservation Act) are more effective for conservation	32	51	17
9	Do tourists/pilgrims and other visitors to the sanctuary follow the rules and regulations set by KWLS	32	55	13
10	Do you think involvement of local communities in conservation was more prior to declaration of Wildlife sanctuary	71	24	5
11	Does Madhmeshwar temple plays any role in Conservation of resources in its vicinity	38	46	16
12	Do you think construction of roads/developmental activities (Electricity, Hospitals, Schools and other facilities) inside the area put less stress on the utilization of available resources in KWLS	69	31	-
13	Do you accrue any benefit of being the resident of protected area	-	100	-
14	Do you support protected area (wildlife sanctuary)	82	18	-

of local people is more in local institutions than wildlife sanctuary while majority of the respondents (71%) said sharing mechanism is more in local institutions than in protected area (wildlife sanctuary) and 42% of respondents were of the opinion that employment opportunities are more in locally managed institutions than wildlife sanctuary (Govt institutions). The respondents (42%) accepted that medicinal plants are the major NTFP collected from the sanctuary followed by wild vegetables (18%) and 12% of respondents said that they collect wild fruits from the sanctuary area. When asked about the role of Wildlife Protection Act and Forest Conservation Act (WPA and FCA), 32% of respondents accepted that these Acts control poaching while 20% and 25% of the respondents think that the damage and encroachment by local inhabitants respectively is prevented by implementation of these Acts. The respondents interviewed were of the opinion that tourists/pilgrims violate the rules and regulations of wildlife sanctuary in which 28% of respondents admitted that tourists/pilgrims create noise/movements inside the sanctuary and 18% of respondents said that they damage regeneration by roaming inside the sanctuary while 47% of respondents said that garbage is thrown by tourists/pilgrims inside the sanctuary. The people's perception about the role of Madhmeshwar deity in conservation was agreed by 57% of respondents who think that being a sacred area any kind of disrespect around the vicinity of temple will make deity unhappy while 32% of respondents think that the presence of different wild animals and plants in sanctuary is a symbol of Hindu goddess and only 20% of respondents think that

conservation around the temple is done because of benevolence of deity. The local people residing inside and at the fringes of sanctuary are dependent on resources like fodder, fuelwood and timber/small timber and the majority of the respondents (81%) said that fuelwood is the major resource extracted from sanctuary while 74% think of fodder and 63% of respondents said that they depend on sanctuary for timber/small wood. The conservation of plant resources for future generation/sustainable utilization was agreed by 71% of respondents followed by 37% for conservation of traditional knowledge where as only 22% of respondents were of the opinion that the impact of irregularities in climatic conditions can be checked by conserving plant resources (Table 2. Q1 – 8).

Discussion

The inclusion of local people's needs and interests in conservation planning is increasingly accepted as essential, both to promote the well-being of human populations, and to ensure that biodiversity and conservation needs are met in the long-term (Sinclair *et al.*, 2000).

The Kedarnath Wildlife Sanctuary (KWLS) is one of the largest protected areas in the Garhwal Himalaya spreading over various parts of Chamoli and Rudraprayag districts of Uttarakhand, and this might be the reason that local inhabitants were aware of wildlife sanctuary however, The people of this area are not fully aware about the area/boundary of Kedarnath Wildlife Sanctuary because of the vast spread of the sanctuary area over inaccessible, remote and hilly terrains.

Table 2 : Perception of people regarding conservation and its value in KWLS

Q no. 1	Damage by wild animals Agriculture crops 60%	Domestic animals 42%	Human life 5%
Q no. 2	Local institutions in conservation Involvement of people 52%	Sharing mechanism 71%	Employment opportunities 42%
Q no. 3	NTFP's collection Medicinal plants 42%	Wild Vegetables 18%	Wild fruits 12%
Q no. 4	Wildlife Protection Act and Forest Conservation Act Control of poaching 32%	Encroachment 25%	Damage by local inhabitants 20%
Q no. 5	Violations by tourists/pilgrims Noise/movement 28%	Damage to regeneration 18%	Garbage 47%
Q no. 6	Role of deity Madhmeshwar in conservation Fear 20%	Symbol 32%	Sacred area 57%
Q no. 7	Dependency on resources Fodder 74%	Fuelwood 81%	Timber/Small timber 63%
Q no. 8	Conservation of plant resources Future generation/sustainability 71%	Irregularity in climate 22%	Traditional knowledge 37%

Majority of the inhabitants think, formation of sanctuary has been effective in conservation of flora and fauna due to formulation and implementation of rules and regulations set by sanctuary authorities. However, people still believe that instead of wildlife sanctuary, locally managed institutions would have been more effective in conservation and also benefits would accrue more to local inhabitants if the sanctuary is controlled by institutions managed by the communities or people rather than wildlife sanctuary managers. This might be the reason that people believe that sharing mechanism of resources and chances of employment generation are more through local institutions which would ultimately help in earning their livelihoods. Pimbert and Pretty (1995) reported that, in developing protected area management schemes, increased attention will need to be given to community-based action through local institutions and user groups. Maikhuri *et al.* (2004) indicates that unless the local people are involved in the process of formulation and implementation of conservation policies and programmes, the objectives of ecological conservation and protected area management in the Himalaya cannot be obtained. People are still dependent on sanctuary for different

livelihoods but have no legal right for grazing and collection of fuelwood and fodder, however people still fulfill their needs illegally from the sanctuary area and these illegal activities and exploitation of resources by inhabitants of the area is a normal practice as they don't have alternative resource for their sustenance and also government did not formulate any policy for their domestic requirement. Lynch (1992) reported that in India, out of 1.2 billion, 64 per cent of the rural population and 100 million tribals depend on the forests for their sustenance. When the existence of a park prevents local people from obtaining resources, the need to survive compels them to resist park formation and subsequent regulations Clay (1991); Dasmann (1991).

The sanctuary area is used by inhabitants for collection of different NTFPs for subsistence purpose with medicinal plants as major products followed by wild vegetables and fruits. Sometimes people sell these products in local markets to get cash. The implementation of WPA (Wildlife Protection Act) and FCA (Forest Conservation Act) have been effective to some extent in controlling poaching and damage caused by local inhabitants to the resources inside the sanctuary. Mukherjee (2006) reported that, conflicts over natural

resources access goes back a long way in history ever since National Parks and Protected areas became the tools for *in situ* method of protecting endangered biological diversity and received legal sanction all over the globe.

The norms set aside by sanctuary authorities are violated by tourists/pilgrims in the form of noise, movements, throwing of garbage etc, as believed by majority of the respondents. Due to this, disturbances to wild animals in breeding, feeding and prey-predation activities as well as the young regeneration might be hampered or damaged. Stalmaster and Newman (1978) reported in their study that human activity adversely affects displacement of Wildlife. Boucher *et al.* (1991) reported that trampling has at least three effects; abrasion of vegetation, abrasion of organic soil horizons and compaction of soil and human trampling is also a cause for reduction of vegetation cover. Present generation is still against the formulation of sanctuary in the area as they do not get any benefits of being the resident of protected area. All developmental activities (Road construction, Electricity, Drinking water supply and School and Medical facilities etc) are not allowed due to the fact that their habitation is inside the protected area. However, the people want developmental activities in the area thinking that employment opportunities will rise and lead them to earn livelihood and ultimately pressure on the sanctuary would be reduced. The building of socioeconomic infrastructure such as roads, health centres, schools and the presence of many development projects as indirect benefits from the park has also been reported by Vodouhe *et al.* (2010).

The belief among the people is that, since the formation of protected area, involvement of local communities in different conservation efforts have been minimized due to ignorance of sanctuary authorities about wisdom of local community in different management and conservation plans. Tiomoko (2007) reported that if communities living adjacent to protected area not included in the conservation strategies of the protected area and the management of the park resources, often results in situations of conflict between local people and protected area administration. For successful participatory conservation strategies, it is necessary to desegregate the term people and to identify the "who" and "how" (Cernea, 1989) so as to understand the differences within a community with regard to power, influence, religion, ethnicity, caste and gender. Many projects and programmes of community participation in biodiversity conservation have ignored the unique role and knowledge that men and women have in natural resource management (Green and Baden, 1994; Purves and Bamba, 1994; Mearns, 1995). People

value and utilize wild resources, and there is good evidence from many different environments for local involvement and management (Scoones *et al.*, 1992; Gomez-Pompa and Kaus, 1992; Nabhan *et al.*, 1991; Oldfield and Alcorn, 1991). Indeed, it is when local people are excluded that degradation is more likely to occur and this reasoning represents a complete reversal for conservation policy and it suggests that the mythical pristine environment exists only in our imagination (Pimbert and Pretty, 1995). Responding to perceptions of many conservationists, especially those working in poorer countries, that wildlife conservation and protected areas were doomed unless local communities become an integral part of conservation efforts (Hackel 1999; Hamilton *et al.*, 2000; Hulme and Murphree, 2001; Manfredo *et al.*, 2004; Yeo-Chang, 2009).

The human animal conflict is a major hindrance in conservation efforts for wild animals, as the wild animals damage agricultural crops as well as are threat to both human lives and domestic animals in the area. Sifuna (2010) carried out a study in Laikipia region of Kenya and observed that 64.5% of respondents have suffered crop damage, 25.8% have experienced livestock damage while 9.7% of inhabitants experienced both, Sifuna (2010) also reported 21.6% respondents suffered crop damage, 79.2% have experienced livestock damage while 9.2% have suffered both crop and livestock damage and 6.7% have been themselves or known a relative or friend who was attacked by wildlife in Okavango Delta region of Botswana. The compensation does not reach to all effected families and people think that the best way to take the revenge is to kill the wild animals to reduce the threat for agricultural crops, domestic animals and human lives. Gadd (2005) observed in a study in Kenya that, people were negative about many aspects of local wildlife conservation, especially animals that raided crops or were dangerous and conflict between wildlife and people can erode local support for conservation.

Sifuna (2005) reported, incidents of wildlife depredation result in heavy losses to people, who appear to be the victims, but later wild animals become the real victims and suffer greatly when people in turn retaliate by poisoning, attacking them or ensnaring the animals using traps or manholes. People admitted that sustainable use of resources will be beneficial for the betterment of future generations and it might be helpful in curbing the irregularities in climatic conditions. Gomez-Pompa and Kaus (1992) reported that parks and nature reserves have long been thought of as the best way of preserving wildlife and these areas have been seen as "pristine environments similar to those that existed before human interference, delicately balanced

ecosystems that need to be preserved for our enjoyment and use and that of future generations". The fear and respect of Madhmeshwar temple is also playing important role in preventing the utilization of resources

in the area. Anthwal *et al.* (2006) reported that, Nature worship has been a key force of shaping the human attitudes towards conservation and sustainable utilization of natural resources.

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भारत के गढ़वाल हिमालय क्षेत्र में संरक्षित क्षेत्र के उपयोग मूल्य तथा संरक्षण में लोगों की अवधारणा

जहांगीर ए. भट्ट, मुनीष कुमार, अजीत के. नेगी और एन-पी- टोडरिया

सारांश

वर्तमान में किया गया अध्ययन गढ़वाल हिमालय के संरक्षित क्षेत्र अर्थात् वन्यजीव अभयारण्य का मुख्य उद्देश्य अभयारण्य के प्राकृतिक संसाधनों के संरक्षण तथा स्थानीय निवासियों की आवश्यकताओं के मूल्य को समझना और विश्लेषण करना है। अध्ययन के लिए दो गांवों (जिसमें से एक अभयारण्य के अन्दर तथा दूसरा किनारे पर स्थित था) में से विभिन्न आयु समूहों के 93 लोगों को लिया गया। वन्यजीवों, पौधों एवं अभयारण्य के संरक्षण तथा मूल्य के बारे में लोगों के अलग अलग विचार थे। 60% लोगों का कहना था कि केदारनाथ वन्यजीव अभयारण्य का पेड़, पौधों तथा जीवों के संरक्षण में काफी योगदान है जबकि 71% लोगों का मानना था कि स्थानीय समुदाय, वन्यजीव अभयारण्य के घोषित होने से पूर्व संरक्षण को ज्यादा योगदान देते थे। 57% लोगों का मानना है कि पवित्र क्षेत्र के आस पास या उसमें किसी भी प्रकार का अनादर वहां के देवता को नाराज करेगा जबकि 22% लोगों का कहना है कि वहां की जलवायु में अनियमिततायें पेड़-पौधों के संरक्षण द्वारा रोका जा सकता है। 60% लोगों का कहना है कि वन्यजीवों से कृषि फसलों को नुकसान पहुँचता है।

References

- Anthawal, A., Sharma, R.C. and Sharma, A. (2006). Sacred groves: Traditional way of conserving plant diversity in Garhwal Himalaya, Uttaranchal. *The Journal of American Sciences*. 2: 35-38.
- Boucher, D.H., Aviles, J., Chepote, R., Dominguez-Gil, O.E., and Vilchez, B. (1991). Recovery of trailsides vegetation from Trampling in a tropical rain forest. *Environmental Management*. 15: 257-262.
- Brandon, K., Redford, K.H. and Sanderson, S.E. (eds.). (1998). *Parks in Peril: People, Politics, and Protected Areas*. Washington, DC, USA: Island Press.
- Cernea, Michael M. (1989). *User Groups as Producers in Participatory Afforestation Strategies*. World Bank Discussion Paper No. 70. Washington, DC: World Bank.
- Clay, J. (1991). *Cultural Survival and Conservation: Lessons from the past twenty years*. In M.L. Oldfield. & J.B. Alcorn (eds.), *Biodiversity: Culture, Conservation and Ecodevelopment*, Westview Press, Boulder, CO. pp. 248-273.
- Dasman, R.F. (1991). *The importance of cultural and biological diversity*. In M.L. Oldfield. & J.B. Alcorn (eds.), *Biodiversity: Culture, Conservation and Ecodevelopment*, Westview Press, Boulder, CO. pp. 7-15.
- Gadd, M. (2005). Conservation outside of parks: attitudes of local people in Laikipia, Kenya. *Environmental Conservation*. 32 (1): 50-63.
- Gomez-Pompa, A. and Kaus, A. (1992). "Taming the Wilderness Myth", *Bioscience*, 42(4): 271-279.
- Green, C. and Baden, S. (1994). 'Gender Issues in Water and Sanitation Projects in Mali', Briefing commissioned by the Japanese International Co-operation Agency, Sussex: IDS, BRIDGE.
- Hackel, J.D. (1999). Community conservation and the future of Africa's wildlife. *Conservation Biology*. 13: 726-734.
- Hamilton, A., Cunningham, A., Byarugaba, D. and Kayanja, F. (2000). Conservation in a region of political instability: Bwindi impenetrable forest, Uganda. *Conservation Biology*. 14: 1722-1725.
- Hough, J.L. (1988). Obstacles to effective management of conflicts between national parks and surrounding human communities in developing countries. *Environmental Conservation*. 15(2): 129-136.
- Hulme, D. and Murphree, M. (2001). *Community conservation as policy: promise and performance*. In: Hulme, D. & M. Murphree, (Eds.), *African Wildlife and Livelihoods: the Promise and Performance of Community Conservation*. David Philip Publ, Cape Town, South Africa, pp. 280-297.
- Ite, U.E. (1996). Community perceptions of the Cross River National Park, Nigeria. *Environmental Conservation* 23(4): 351-357.
- Kumar, S. (2002). Does Participation in Common Pool Resource Management Help the Poor? A Social Cost-Benefit Analysis of Joint Forest Management in Jharkhand, India. *World Development* 30(5): 763-782.

- Logan, B.I. and Moseley, W.G. (2002). The Political Ecology of Poverty Allevation in Zimbabwe's Communal Areas Management programme for Indigenous Resources (CAMPFIRE). *Geoforum* 33: 1-14.
- Lynch, O.J. (1992). *Securing Community Based Tenurial Right in the Tropical Forests of Asia-an overview of current and prospective strategies. Issues in Development*, World Resources Institute, Washington. pp.2.
- Maikhuri, R.K., Rao, K.S., Nautiyal, S. and Saxena, K.G. (2004). Conservation Policy and Social conflicts in Protected Areas of the Indian Himalaya and options for conflict resolution: A Case Study from Nanda Devi Biosphere Reserve, Uttaranchal. Abstract- National seminar on resource appraisal, Technology application and environment challenges in central Himalaya, Department of Geography, H.N.B.Garhwal University, Srinagar Garhwal, Uttaranchal (India).
- Manfredo, M., Teel, T. and Bright, A.D. (2004). Application of the concepts of values and attitudes in human dimensions of natural resources research. In: Manfredo, M., Vaske, J., Bruyere, B., Field, D., Brown, P. (Eds.), *Society and Natural Resources: A Summary of Knowledge*. Modern Litho, Jefferson, MO, USA, pp. 271-282.
- Mearns, R. (1995). *Institutions and natural resource management: access to and control over woodfuel in East Africa*, in T. Binns, *People and Environment in Africa*, London: John Wiley and Sons.
- Mukherjee, A. (2006). *Livelihood, Conservation and Conflict over Natural resources within Protected Areas: A case study of Kanha National Park*, Ph.D. Thesis, University of Reading, Department of Sociology.
- Nabhan, G.P., House, D., Humberto, S.A., Hodgson, W., Luis, H.S. and Guadalupe, M. (1991). "Conservation and Use of Rare Plants by Traditional Cultures of the US/Mexico Borderlands", in Oldfield M.L. and J.B. Alcorn (eds.), *Biodiversity: Culture, Conservation and Ecodevelopment*, Westview Press, Boulder.
- Oldfield, M.L. and Alcorn, J.B. (1991). *Biodiversity: Culture, Conservation and Ecodevelopment*, Westview Press.
- Peters, J. (1999). Understanding conflicts between people and parks at Ranomafana, Madagascar. *Agriculture and Human Values* 16: 65-74.
- Pimbert, M.P. and Pretty, J.N. (1995). *Parks, People and Professionals: Putting 'Participation' into Protected Area Management*. Geneva, Switzerland: United Nations Research Institute for Social Development.
- Purves, M. and Bamba, I. (1994). 'The Macina Wells Project: Final Evaluation Report', London: CARE, mimeo.
- Scoones, I., Melnyk, M. and Pretty, J.N. (1992). *The Hidden Harvest: Wild Foods and Agricultural Systems*, an annotated bibliography, IIED, London with WWF, Geneva and SIDA, Stockholm.
- Sekhar, N.U. (2003). Local peoples Attitudes towards Conservation and Wildlife Tourism around Sariska Tiger Reserve, India. *Journal of Environmental Management*. 69: 339-347.
- Sifuna, N. (2005). Assessing farm-based measures for mitigating human-elephant conflict in Transmara district, Kenya. Mimeo.
- Sifuna, N. (2010). Wildlife damage and its impact on Public Attitudes Towards Conservation: A Comparative Study of Kenya and Botswana, with Particular reference to Kenya's Laikipia region and Botswana's Okavango Delta Region. *Journal of Asian and African Studies*. 45(3): 274-296.
- Sinclair, A. R. E., Donald, L. and Colin, W.C. (2000). Conservation in the real world. *Science*. 289 (15 Sept), 1875.
- Singh, G. and Rawat, G.S. (2011). Ethnomedicinal Survey of Kedarnath Wildlife Sanctuary in Western Himalaya, India. *Indian Journal of Fundamental and Applied Life Sciences* 1(1): 35-36.
- Stalmaster, M.V. and Newman, J.R. (1978). Behavioural responses of wintering bald eagles to human activity. *Journal of Wildlife Management* 42: 506-513.
- Stevens, S., (ed.). (1997). *Conservation through Cultural Survival: Indigenous Peoples and Protected Areas*. Washington, DC, USA: Island Press.
- Tello, B., Fiallo, E.A. and Naughton-Treves, L. (1998). Ecuador: Podocarpus National Park. In: *Parks in Peril: People, Politics, and Protected Areas*, ed. K. Brandon, K.H. Redford & S.E. Sanderson, pp. 287-322. Washington, DC, USA: Island Press.
- Tiomoko, D.A. (2007). Impacts des recettes de la chasse safari sur la conservation participative de la Reserve de Biosphere de la Pendjari. Universite d'Abomey-Calavi; Faculte des Lettres Arts et Sciences Humaines, Memoire de DEA. 41 pp.
- Vodouhe, F.G., Coulibaly, O., Adegbedi, A. and Sinsin, B. (2010). Community perception of biodiversity conservation within protected areas in Benin. *Forest Policy and Economics* 12: 505-512.
- Yeo-Chang, Y. (2009). Use of forest resources, traditional forest-related knowledge and livelihood of forest dependent communities: cases in South Korea. *Forest Ecology and Management* 257: 2027-2034.