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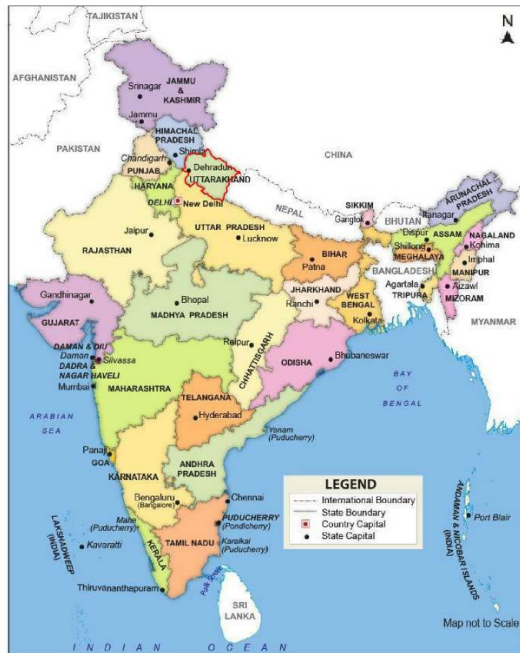
Impact of Conservation and Development on the Vicinity of Nanda Devi National Park in the North India

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- 1 The conservation of critical habitat is a priority issue and usually achieved by establishing national parks or wildlife sanctuaries. Equally important is the sustained supply of electricity for the metro areas and various industrial purposes. The Himalayas, which have high hydropower potential and a rich bio diversity, are the focus of both the hydropower and conservation sectors. While the hydropower sector is seeking the construction of dams in the Himalayan river valleys (Agarwal, 2013; Thakkar, 2014; Valdiya, 2014), the higher reaches of the Himalayas are systematically being networked into national parks. On the one hand, conservation policies have been implemented as stringently as possible, while on the other, the government is also encouraging more and more hydropower projects in the region. Thus, conservation and development initiatives are both having an impact on the very existence of the communities residing in these regions. These impacts are manifested by the displacement of local communities as a result of both the development and conservation efforts. Since some of the dams are on the periphery of national parks, the communities in these areas suffer as a result of the national parks as well as the dams.

India. States and Union Territories



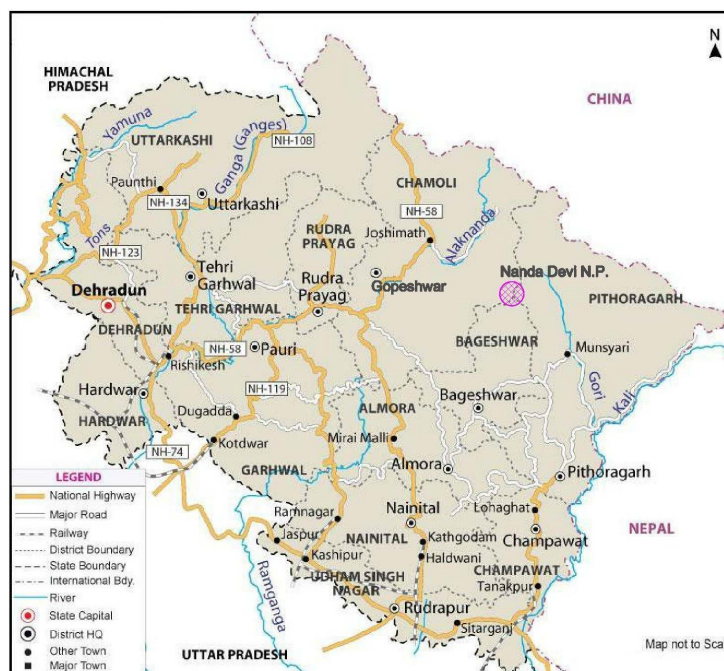
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- 2 Fernandes (2008) points to an India-wide figure of 60 million people affected by projects between 1947 and 2004 across 25 million hectares of land, which includes 7 million hectares of forest and 6 million hectares of other common revenue lands and forestlands (common property resources). This figure is four times the estimated 15 million refugees displaced at the time of Partition. Tribal communities, which constitute just 8.08 percent of India's total population of 1.3 billion, comprise 40 percent of these 60 million people affected by the projects. Precise figures for the number of people displaced from protected areas (PAs) in India are not available, which suggests the indifference of the way in which this important issue has been treated by state and central governments (Lasgorceix & Kothari, 2009). The global picture of the size and complexity of PA classification and the impacts of different types of PAs on human activities is unclear (Agarwal & Redford, 2009). According to Cernea (2006), recent social research has generated a large body of empirical findings that prove that many population groups, including but not limited to tribal groups, are materially impoverished and are made worse off by the "restriction of access" to natural resources, because of some development projects or the establishment of PAs. The benefits of conservation tend to be highest at the global and national levels, while the costs are highest for the local communities (Redford & Fearn, 2007).
- 3 Displacement as a result of conservation or development and its impact on local communities is a major issue in India. The reasons behind the curtailment of rights or any viable alternatives have rarely been explained to the villagers, since rehabilitation is treated as a "technical" process without any consideration for human or sociological issues (Kothari & Patel, 2006). Furthermore, the processes of environmental degradation

and the appropriation of natural resources by the state or a small number of individuals have specific class-gender implications that are manifested in the erosion of both livelihood and the knowledge systems. It is mostly the women and female children of poor rural households who bear the brunt of such resettlements and migrations (Agarwal, 1997). Highlighting the enormous gaps between the fields of gender studies and biodiversity, which result in the ignorance of gender issues and approaches in agricultural and forestry institutions, Badola and Hussain (2003) conclude that “planning to involve women’s participation cannot proceed without more extensive research – not only to document gender aspects of biodiversity conservation but also to document the culturally held perceptions of women and compare them with those of men”.

Study area

Uttarakhand State



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- 4 The present study was conducted in the buffer zone villages of the Nanda Devi Biosphere Reserve in the Himalayan state of Uttarakhand in India. Popularly known as the Niti Valley, the study area is located in the Joshimath block of the Chamoli Garhwal district, between the latitudes of 30°20'N and 31°00'N and longitudes of 79°40'E and 80°20'E. The valley gets its name from the last upstream village of 'Niti' located near the Indo-Tibetan border. The altitude within the valley varies between 2,100 and 7,817 masl. The Dhauliganga, which flows south-southwest, is the major river and has two main tributaries: the Rishiganga flows west-southwest, and the Girthiganga flows towards the west. There are 24 villages in the Niti Valley upstream of Reni. With the exception of Bhalgaon, all the villages are inhabited by members of the Bhotiya Scheduled Tribe (Kainthola et. al, 2006). During the early 20th century, the combined population of the Bhotiya community from the Niti and adjoining Mana Valley was 470 (Walton, 1910). In

the 20th century, the population grew and stabilised. But the population is currently in decline. A comparison of the 10-year census figures suggests a downward trend: In 1991, a total population figure of 3,752 people (1,855 men and 1,897 women) was recorded, but by the subsequent census in 2001, the population had fallen to 3,599 (1,775 men and 1,824 women) (see tab. 1). There is a significant increase in the number of families abandoning their summer villages to settle permanently elsewhere. This is more evident in the villages located near the Indo-Tibetan border (Naitthani, 2014).

- 5 For the purpose of data collection, two distinct types of villages from the Niti Valley area were selected at random. The first sample included villages that are adjacent to the core zone of the Nanda Devi National Park. The available research literature has highlighted that these villages have suffered the most as a consequence of the notification of the national park. The second sample consisted of villages located further upstream, closer to the Indo-Tibetan border. All the sample villages practise transhumance, with sample 1 villages moving within the Niti Valley, while sample 2 villages move more than 100 kilometres downstream during the winter migration. In the past, the sample 2 villages used to trek for few days and camp alongside the road while performing winter-summer migration. They herded their entire livestock of cows, bulls, horses, sheep and goats twice a year to summer and winter destinations. Now most of the families are using transportation to move around. Only a few families, who continue to cling to agriculture, are still using the traditional pattern.

Table 1: Decadal changes in the population of various villages in the Niti Valley

Sl. No	Revenue Village	Total Population	Male	Female	Scheduled Caste		Scheduled Tribe	
					Male	female	Male	Fe male
1	Reni	149	64	85	-	-	63	85
	(Chak Shubhain)	153	71	82	-	-	66	82
2	Reni	98	44	54	5	1	35	40
	(Chak Lata)	153	82	71	0	0	72	69
3	Paing	104	45	59	-	-	44	59
		105	44	61	1	0	42	61
4	Jua Gwar	113	55	58	-	-	55	58
		78	37	41	-	-	37	41
5	Jugju	40	17	23	-	-	17	23
	(Chak Lata)	32	16	16	-	-	16	16
6	Lata	348	153	195	26	29	114	166
		342	150	192	24	35	123	154
7	Suki	121	55	66	15	18	39	48
		163	79	84	14	21	64	62

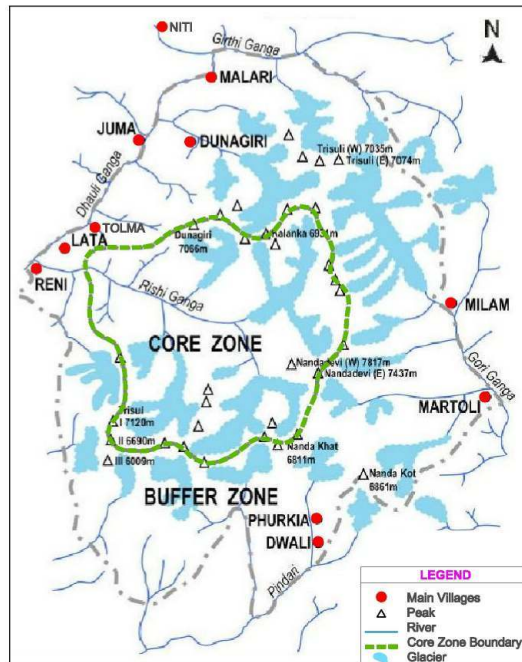
8	Bhalgaon	155	80	75	-	-	-	-
		205	92	113	-	-	-	-
9	Tolma	155	87	68	8	4	45	48
		145	84	61	13	10	45	45
10	Pangrasu	90	40	50	-	-	40	50
		94	47	47	-	-	45	47
11	Long Segari	75	36	39	-	-	35	39
		67	31	36	-	-	31	36
12	Jumma	214	131	83	3	2	34	44
		98	54	44	2	0	39	39
13	Jelum	409	208	201	13-	7-	189	194
		315	164	151			160	150
14	Kosa	123	61	62	6	7	56	55
		194	99	95	14	15	84	80
15	Kaga	72	39	33	6	3	32	30
		58	30	28	0	0	30	28
16	Garpak	49	24	25	-	-	23	25
		33	19	14	-	-	19	14
17	Dronagiri	160	77	83	-	-	77	83
		89	47	42	2	1	45	41
18	Farkiya	113	60	53	16	13	43	40
		251	129	122	28	25	101	97
19	Bampa	97	45	52	4	5	40	47
		74	34	40	6	5	21	35
20	Gamshali	208	98	110	6	6	90	104
		147	58	89	3	5	55	84
21	Niti	123	57	66	-	-	57	66
		98	43	55	11	6	33	29
22	Mehargaon	29	14	15	1	-	13	15
		26	14	12	0	0	13	12
23	Kailashpur	143	62	81	9	9	53	72
		245	124	121	0	0	124	121

24	Malari	564	303	261	29	34	209	227
		434	227	207	20	17	207	190
TOTAL								
1991 ▶		3752	1855	1897	147	138	1403	1618
2001 ▶		3599	1775	1824	138	140	1472	1533

- 6 The settlement patterns of the Bhotiya community have traditionally revolved around the trans-Himalayan trade routes to Tibet. Cross-border trade with Tibet was made possible through specific trade routes that involved crossing passes high up in the Himalayas. These areas mostly remained covered in snow, and the months between summer and early autumn provided a limited window for cross-border transactions. Cross-border trade in the region was entirely in the hands of the Bhotiyas (Walton, 1910). Compared with the fertile lower valleys, a central feature of the higher-elevation areas that the Bhotiya tribe inhabits is the lack of arable land. At higher elevations, settlements cling to the steep hillsides around whatever cultivable ground is available (Brown, 1994). As transhumant pastoralists, the Bhotiya community seasonally moves from low-altitude winter villages to high-altitude summer villages. Unequal environmental conditions on either side of the border created enough potential for trans-border trade. Inhabiting the border areas near the trans-Himalayan passes, the Bhotiyas efficiently utilised their local knowledge and ethnicity (including their Tibetan-like physical appearance) to act as cultural brokers between the Tibetan Buddhist and the Hindu cultural influences. They managed to establish a monopoly over the trans-border trade through ritualised practices that ignored the important Hindu matter of touch pollution (Bergmann *et al.*, 2008). Until the closure of the Indo-Tibetan border in 1962, they combined their agro-pastoral activities with trans-Himalayan trade with Tibet (Nüsser and Gerwin, 2008).
- 7 The lifestyle of transhumance is still prevalent amongst the Bhotiyas. Villagers rely heavily on the biodiversity of the reserve and use approximately 97 species of plants for a variety of needs including food, medicine, fodder, fuel, building materials and religious rituals (Samant, 1993). These forests and alpine meadows also play host to a number of animal species, some of which are threatened or endangered (Bosak, 2006).

Nanda Devi National Park and Biosphere Reserve

Nanda Devi National Park. Core zone and adjoining villages



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- 8 The Nanda Devi was declared a wildlife sanctuary as early as 1939 following the first successful ascent of Nanda Devi by a British-American expedition in 1936. Gradually the area became popular, and especially during the post-independence period it grew to become a favourite destination for the large mountaineering community from around the world. This created sufficient seasonal employment for the local communities impacted by the closure of cross-border trade due to the Sino-Indian conflict of 1962. However, unrestricted mountaineering caused severe ecological damage to the area, which prompted the state government to upgrade the mountainous wildlife sanctuary area, covering some 625 km², as a national park, as per notification no. 3921/14-3-35-80 issued on September 6, 1982 (Uttar Pradesh Govt. Order, 1982). In 1988, the Nanda Devi National Park (NDNP) became the core zone of the Nanda Devi Biosphere Reserve (NDBR) with the addition of 2,237 km² of area as a buffer zone. This reserve was recognised as a World Heritage Site in 1988. In 2000, the 88 km² area of the Valley of Flowers National Park was added as a second core zone of the Biosphere Reserve, and the buffer area grew in size to 5,860 km². In 2004, the NDBR was included in UNESCO's World Network of Biosphere Reserves (Saxena, et. al 2010). The first Biosphere Management Plan for the NDBR was formulated in 1993 with an annual plan budget of \$190,000, out of which 58 percent was allocated to salaries. The author of the plan admits in the preface that the plan was written over the span of a few weeks without any visits to some of the areas of the reserve because of a lack of staff and infrastructure (Mohan, 1993).
- 9 In June 1983, the village councils of Lata and Reni received official word of the notification from the Divisional Forest Officer (DFO) of the newly established NDNP. The notice stated that under the Wildlife Protection Act of 1972, grazing, trekking, quarrying

and extraction and entry would no longer be permitted inside the national park. However, the notice guaranteed a set of compensatory measures, other income generation opportunities and the provision of alternate grazing sites (DFO letter, 1983).

- 10 The restrictions had a severe impact on the villages of Lata, Reni, Paing and Tolma, as they lost their seasonal grazing grounds, access to non-timber forest products (NTFPs) and income from tourism. A number of researchers have studied the various implications of the ban for the Bhotiya community. Rao et al (2000) quantified the economic impact of the restrictions on the Bhotiya community. Before the establishment of the national park in 1982, the village cooperatives had earned about 664,982 rupees per year (equal to \$33,249, at the rate of \$1 = Rs. 20 in 1981) to extract and sell NTFPs. The ban on human activities inside the core zone also caused an increase in the incidence of crop depredation by wildlife, which accounted for losses of about Rs. 538,620 (\$13,466 at the rate of \$1 = Rs. 40 in 1996). Out of the 156 beehives kept by farmers, 104 were reported to be damaged by wildlife in 1996.
- 11 After an in-depth study of the NDBR, Maikhuri *et al.* (2001) estimated the impact of restrictions on a wide range of activities. Based on a sample study of 419 household in 10 villages, the mean annual loss for each household was estimated at Rs. 1,285, Rs. 1,195 and Rs. 156 due to damage caused by wildlife to food crops, fruit trees and beehives, respectively. The estimated loss from restrictions on the collection of medicinal plants for sale was Rs. 1,587, and a loss of Rs. 7,904 resulted from the ban on tourism in the core zone area. Other impacts included a sharp increase in the incidence of livestock depredation by wildlife. Silori (2001, 2004) reported an improvement in biological richness after the ban on tourism and a significant increase in outmigration for seasonal employment. The insensitivity of the Forest Department in addressing the livelihood issues of the affected villages resulted in the establishment of the Jhapto-Chheeno (swoop and grab) movement in 1998, as hundreds of villagers marched with the cattle inside the core zone of the NDNP to reclaim their traditional rights (Kainthola *et al.* 2006). Bosak (2008) opines that the conflict over the management of the NDBR is grounded in part in the divergent conceptions of nature that produce competing discourses on nature and different ideas of management.
- 12 While there are a number of studies on the local impact of conservation policies, there is no systematic information on the linkages between conservation policies, displacement and the compensation packages offered to mitigate the negative impacts of displacement. There appears to be a definite need for systematic research from the perspective of sustainable livelihood and with the aim of understanding the various linkages between the displacement caused by conservation and development on the one hand and compensation packages in the High Himalayas on the other.

Research methodology

- 13 Primary data were collected using a structured questionnaire with 25 questions. These data were complemented by secondary data from a literature review, as well as official records/documents and information accessed via archives, government records and by using the Right to Information (RTI) Act. In India, citizens are allowed to get access to official government records, with the exception of defence and sensitive, security-related records. This right to access government records is granted under the RTI Act and has

helped scores of people find the facts to protect their rights. The questionnaire was finalised by means of pilot testing on 30 subjects from the villages of Lata and Gamshali.

- 14 The first three questions are related to basic information regarding the individual and his/her family. The remaining 22 questions cover all the important aspects of this study, such as the process of compensation design and its relevance to the community, the problem of outmigration, the non-accessibility of natural resources and people's dependence on them, the loss of traditional knowledge, issues related to sustainable livelihood, concerns and issues related to women, the relevance of the government's conservation policies and development vs conservation. Respondents above the age of 40 were more vocal in answering the questions. Since they faced and suffered the transition from the era of free access to severe restrictions, most of them became very agitated – angry, emotional, nostalgic and sometimes frustrated – during the interview.
- 15 During the field work, a great deal of information was obtained through informal interviews, especially from women. Information obtained through informal interviews helped for reference during the process of checking the village level records and drafting the RTI applications. The interviews were conducted in various settings. Many questions in the questionnaire required the sharing of experiences, expectations and perceptions of the future; therefore, they were descriptive in nature and generated qualitative data/information. The data were analysed using SPSS software. Most of the interviews were photographed and documented via audio with prior permission from the participating subjects and conducted in Hindi and the local dialect, Garhwali.

Data collection

- 16 Sample 1: Out of the four villages adjacent to the core zone of the NDNP, i.e. Lata, Paing, Tolma and Reni, two villages were randomly selected: Lata and Tolma. The sample 1 villages practise transhumance within the Niti Valley. Sample 2 comprised the villages of Malari and Gamshali, which are located upstream of the Dhouli Ganga River. Although they are not directly impacted by the establishment of the NDNP, they are remote and inhabited during the summer season only. During the winter, the families from these villages migrate more than 100 kilometres downstream, outside the Niti Valley. These two villages once used to be the hub of the cross-border trade with Tibet. Now mostly senior family members participate in the annual transhumance. The youth prefer to stay in the winter settlements, as there are no opportunities for livelihood in these remote locations. As a result, the mean age of respondents from Gamshali is higher.

Table 2: The number of male and female respondents from sample villages (*mean age in parentheses).

Age & Gender ►	Male	Female	Total
Sample villages ▼			
Lata	30 (47)*	40 (45)*	70
Tolma	10 (47)*	20 (49)*	30
Ghamshali/Malari	20 (66)*	30 (60)*	50

Table 3: Age range of respondents from sample villages

Sample Villages ► Age range ▼	Lata		Tolma		Ghamshali/Malari	
	M	F	M	F	M	F
18-25 years	05	03	01	02	02	00
26-35 Years	05	10	02	08	03	04
36-50 Years	10	13	03	02	03	06
51-65 Years	07	10	02	01	05	10
66 & above	03	04	02	07	07	10

Table 4: Level of education in the sample villages (female in parentheses)

Age in Years	Illiterate	Education upto 5 th grade	Education upto 8 grade	Education upto 10 or 12 grade	Graduate	Post Graduate
18-25 Years	1 (-)	- (-)	2 (4)	3 (1)	2 (-)	- (-)
26-35 years	- (1)	1 (8)	2 (9)	3 (3)	2 (1)	2 (-)
36-50 years	- (12)	1 (8)	12 (1)	- (-)	2 (-)	1 (-)
51-65 Years	5 (21)	4 (0)	4 (-)	1 (-)	(-)	- (-)
66 & Above	6 (20)	5 (1)	- (-)	- (-)	1 (-)	- (-)

Results and discussion

- 17 Analysis of the data collected during the present study suggests that the Bhotiya community derives its livelihood from a variety of sources more or less linked to the land and the landscape of the area. Over 68.7 percent of the respondents had more than one source of income, besides farming. The recent and most lucrative is the collection of caterpillar fungus (*Cordyceps sinensis*) that is smuggled to China through Nepal (Singh et.al, 2010). Other sources include farming, tourism, self-employment (like running a grocery shop), contractual work with the Forest Department or providers of hydro-electric projects, jobs such as driver or contract worker, and handicrafts. The majority of respondents from the villages adjoining the core zone (sample 1) reported a decrease in handicraft income after the establishment of the national park (Lata 87.1 percent, Tolma 93.3 percent), while the villages far from the core zone reported no impact on their handicraft income. The income from tourism, which used to be 100 percent before the establishment of the park, has now fallen to 10.7 percent in Lata and Tolma. As the sale of souvenirs is an integral part of the tourism enterprise, the drastic drop in the travellers' footfall due to the ban on tourism also diminished hopes of selling handicrafts like carpets and shawls. The villages in sample 2 were not dependent on the tourists/visitors

to the NDNP and had their own marketing network in and around their winter villages; hence, there was no impact on their income through handicraft.

Table 5: Impacts of the formation of the national park as reported by male and female respondents from villages adjacent to the park (sample 1). Figures refer to the percentage of total subjects reporting the respective impact.

Sl No	Impact of national park on villages from sample 1	Male	Female
1	Loss of income due to ban on tourism	78%	82%
2	Increase in out migration	83%	78%
3	Loss of farming	85%	80%
4	Loss of medicinal herbs	45%	88 %
5	Lack of wool for handicraft production	18%	87%
6	Loss of traditions and customs	25%	57%
7	Loss of traditional knowledge	50%	23%
8	Loss of cattle	70%	75%
9	Loss of income from non-timber forest products	55%	78%
10	Change in food habits due to access restrictions	48%	80%
11	Increased dependence on market	78%	88%
12	Increase in incidences of wildlife depredation	88%	89%
13	Increase in demands for dowry	0%	37 %

- 18 Significant, gender-specific differences were observed in terms of the impact of the national park on dowry, loss of customs and loss of raw material for handicrafts (table. 5). It was the female respondents from the sample 1 villages who mentioned dowry as an impact of the closure of the NDNP for the Bhotiyas. The financial insecurity created by the closure of the park, the increasing expenses with no additional source of income, increasing size of the family, need to educate children and dependence on the market were mentioned as the main triggers for expecting, asking and accepting dowry, a practice that the community had never followed before. In fact the traditional practice amongst the Bhotiyas was the opposite: The bridegroom used to offer a bride price to the parents of the bride. Burman (2012) opines that the women in the tribal communities toil hard and are considered to be assets to the community; hence the practice of bride price. With the introduction of a global market economy, their economic values are decreasing, and the practice of a “bride price” is giving way to the system of dowry, as witnessed in the general society.

Loss of livestock due to attacks by wild animals

- 19 Some 89 percent of female and 88 percent of male respondents listed attacks by wild animals on cattle and humans and the damage that they inflict on the crops and fruit trees as a major impact of the ban. While there is a compensation provision for loss of cattle and human life due to wildlife attacks, there is a big difference between the current market rates and the compensation that the Forest Department provides. In the case of an injury caused by wild animals, the compensation for humans is up to Rs. 25,000. It can be much less depending upon the nature of injury or whether the incident result in death; compensation can reach up to Rs. 100,000.

Table 6: Differences between compensation offered and current market price, (\$ 1=RS 51 IN APRIL 2012 & RS. 67 IN MARCH 2016)

Cattle	Official compensation rates in Rs.	Market Price in Rs.
Bull	5,000	5,000
Cow	3,000	15,000–20,000
Calf	1,200	3,000
Goat	500	4,000
Horse	5,000	30,000
Mule	5,000	80,000–100,000

(Source: Office of the Deputy Forest Officer, Nanda Devi National Park, Joshimath)

- 20 As per the regulations, the owner of the cattle must report the matter within 24 hours after the incident has taken place. The villagers find it difficult to follow the procedure because sometimes it takes about a day to find the animal that was attacked, then they have to bring photos and a certificate from the veterinarian. Generally the veterinarian is either in Reni or Joshimath, which is far from the other villages, thus delaying the formalities even further.
- 21 According to the respondents there are multiple reasons for the spike in attacks. When the park was open, the wildlife was pushed towards the interior. The wildlife often preyed on the goats and sheep grazing on the meadows. Now the village commons share the boundary with the park, and in the absence of any human activity the wild animals are now entering the villages.
- 22 The increasing instances of forest fires affecting overall growth and the flora of the forest also force the animals to venture out of the forest, enter the fields and damage the crops, fruits, cattle and humans. In the past, the villagers had licensed guns with which they could at least scare the animals off, if not kill them, but under the new system the use of guns – even to scare the animals – is strictly prohibited. Instead, fire crackers are given to the villagers to scare the bears away, but these are given out at the Joshimath office of the Forest Department, which is about 25–35 kilometres away, which is very inconvenient for

the villagers. This policy of “no guns” has made the animals fearless. Bears are now entering the houses to eat honey, apricot and apple, and sometimes they damage the houses or the doors.

- 23 The growing number of attacks has compelled the villagers to give up the age-old practice of having beehives inside their house. Most have stopped growing apples as well because it attracts the bears. The respondents also said that with the creation of the park the animals have become free to roam about anywhere, but the villagers have been caged in. In the opinion of most of the respondents, there were fewer attacks by wild animals on humans, cattle and crops when villagers were allowed access to the forest, because it pushed the wild animals towards the interior of the forest and created a distance between the boundaries of the village and the forest.

Effect on religious rituals

- 24 When asked about the impact of the ban on the religious rituals of the community, 99 percent of the families said that they performed religious rites and rituals in the *bugyals*, (meadows), by the side of the river, in the forests etc. Responding to the question whether the NDBR or conservation policies of the government have affected their religious and traditional rituals, all of the respondents from Lata and Tolma responded in the affirmative. They reported that the annual offerings to the goddess Dubri were discontinued, as the place of worship now falls within the core zone of the park. There was no impact on religious rituals in the sample 2 villages. The women also reported a loss of recreation opportunities after the closure of the core zone. In the past, they used to visit the alpine meadows to collect herbs and morchella mushrooms or for ritualistic purposes. They used to even camp out for a few days in the alpine meadows. The time spent in the forest with other women provided an opportunity to chat, sing songs and say or do things they liked without interference from other family members, especially the mothers-in-law. The forest was like a *mait* or *maika* (mother's home for married women) for them. Saving *maika* (forests) was the main watchword of women's groups against the commercial felling of trees during the Chipko Movement in the 1970s (Jain, 1984).

Loss of traditional knowledge

- 25 Another issue of concern for the male respondents was the impact that the loss of traditional knowledge has on the younger generation, including the loss of knowledge of herding methods, wool industry, farming, flora and fauna, working as a high-altitude guide and cook etc. As the younger generation no longer has exposure to the traditional lifestyle of the Bhotiyas, which includes their customs, traditions and rituals, they may not have any regard or respect for these, which are nonetheless essential aspects of the Bhotiya lifestyle. Moreover, the young ones did not have any opportunity to visit the core zone; therefore they also lacked the knowledge of surviving at high altitudes. The older generation was worried that if the ban continued, the future generations would have no knowledge of their own traditional identity, which would spell the beginning of the end for this culturally rich community.

Loss of income from tourism

- 26 Loss of income due to the ban on tourism and the attacks on cattle and humans by wild animals were major concerns for both male and female respondents. Surprisingly the ban on tourism as a factor was cited more by the female respondents than the males, as 82 percent of female respondents listed it as a concern, against 78 percent of the males. As per the information provided by the respondents, large numbers of tourists and expeditions were coming to the region. Owing to the shortage of porters the expeditions sometimes had to wait at the roadhead. The male respondents, mainly 50 years and over, mentioned that so many expeditions used to come to the area that they had to have them queue, leave one group in the base camp, bring the previous group back and then take the next group waiting at the roadhead to the upper expedition area. They were paid good money, the ration was taken from the village, and meat was readily available as the pack goats used to go with the expedition. Upon returning from expeditions, the expedition groups would give their gear and spare goods to the villagers and also purchase their woollen products. The villagers were of the opinion that it was the government that issued permits for expeditions, and if the government felt that excessive tourism was causing environmental damage, then they should have regulated or stopped tourism instead of prohibiting the community from entering the forest and depriving them of their traditional customary rights.

Loss of access to medicinal herbs

- 27 Some 88 percent of the female respondents listed the loss of access to medicinal herbs as one of the adverse impacts of the NDBR, whereas only 45 percent of the male respondents cited it as an impact. About 96 percent of the female respondents in this study agreed that when they fell sick they preferred home remedies and herbal treatments to allopathic or market treatments, both for themselves and for their children. The easy access to medicinal herbs prior to the ban also provided them with a source of income as they used to sell small quantities of the herbs collected from the forest. After the ban was imposed, they were no longer able to get the herbs, which had an adverse effect not only on their health but also on their pockets.

Consultation with community before closing the park

- 28 In response to the question whether the villagers were consulted prior to the closure of the park, 76 percent from Lata and 80 percent respondents from Tolma replied in the negative; the remaining respondents, who were born after the closure of the NDBR or were females married in these villages after the closure generally expressed ignorance about this issue.
- 29 The respondents said that they had no idea about the imposition of the ban as they were neither consulted nor informed about the ban. The news came as a shock, and although the villagers protested the decision, it was no to avail because the officers of the Forest Department in Joshimath were merely implementing the decisions taken in the nation's capital, New Delhi, without considering the implications of such decisions. The order created an atmosphere of insecurity and fear in the minds of the villagers. In such a state

of affairs, it was beyond the capacity of the villagers to approach the decision-making authorities with their grievances.

Process of compensation design

- 30 Out of the total number of respondents, 75 percent replied in the negative to the question of whether the villagers were consulted before the decision was taken regarding the compensation package and whether it would be appropriate and useful. The remaining 25 percent did not know about the issue. Almost all the respondents who replied said that the compensation was meaningless as the government cannot compensate the damage it has caused to the culture and environment of the Bhotiya community.
- 31 To find the details on the design and distribution of the compensation package, the researcher submitted a query under the RTI Act to the Forest Department in Joshimath. Surprisingly the Forest Department replied that there was no compensation, as no villages were affected by the NDNP because all the villages fall outside the core zone; consequently, the national park has not caused any displacement. As part of the query, the researcher also asked why the Forest Department was distributing gas, solar lights, pressure cookers and wool in the NDBR region if there was no displacement and if the villages were not affected by the ban. Officials from the Forest Department responded that it falls under the department's social welfare scheme.
- 32 Various studies conducted by experts at both the national and international level, many of them funded by the government of India, itself, conclude that the impact of closure was the most severe on Reni, Paing, Lata and Tolma, and the compensation was not sufficient (e.g. Rao *et al.*, 2000); Maikhuri *et al.*, 2001 & 2005; Silori, 2001 & 2004; Kainthola *et al.*, 2006). These studies make a whole range of suggestions to resolve the issues of the impacted communities. As far as the issue of the relevance of the compensation to resolve the problem of sustainable livelihood perspective is concerned, the researcher found that the attitude of the Forest Department was apathetic, so much so that the department in its RTI reply even refused to acknowledge the fact that any villages were affected by the creation of the NDNP and implied that there was no need to compensate the community.
- 33 Before the formation of the State of Uttarakhand in November 2000, the hill regions were part of the northern state of Uttar Pradesh. In the process of examining the government documents, it was found that the then-Chief Secretary of the State Government of Uttar Pradesh had recommended an in-depth study of the area regarding grazing rights and concessions made to the people in and around national parks. This recommendation is part of the minutes of the high-level meeting in which a decision was taken to impose restrictions on all human activities inside the Nanda Devi National Park (Minutes of the meeting, 1983). Ignoring the decisions of a meeting by lower-level functionaries, the Forest Department went ahead with the imposition of restrictions without conducting an impact study.

Impact of hydro-electric projects

- 34 "When we speak of protecting undisturbed habitat or wilderness, then it is important to clarify that the word 'undisturbed' refers to the absence of disturbance by modern technologies" (Pompa and Kaus, 1992). However, modern technologies in the form of hydro-electric projects are aggressively being implemented in the vicinity of the core

zone of the NDNP. The Rishiganga project (13.20 MW) is already commissioned on the Rishiganga near the confluence of the Rishi Ganga and Dhoul Ganga rivers in the Niti Valley. Two more hydro-electric projects, namely Rishiganga I (70 MW) and Rishiganga II (35 MW), have been proposed in this sub-basin within the NDNP. The maximum impacts may be felt in the Dhauliganga (W) Valley, upstream of Reni, where four major (>100MW) projects are to be built along a 50-kilometre stretch of the river (Chopra 2014a). The hydropower project has managed to purchase a sizeable amount of land from the villagers in Lata. While the issue of actually constructing the dam is currently sub judice (the cases related to permit construction of hydro projects are pending in the Supreme Court of India), the logistical construction on the purchased land is going on. Thus a village that once lost its traditional livelihood to conservation is now on the threshold of being swallowed up by the hydro-electric project, and there are few more villages upstream of Lata whose future appears to be equally precarious.

Conclusion

- 35 This study showed that the traditional institutions and systems of resource use and conservation of natural resources have either been destroyed or rejected by the creation of and restrictions imposed due to the establishment of the Nanda Devi National Park and its Biosphere Reserve. The sustainable livelihood patterns have been adversely affected, which has increased suffering in the community. The failure to conduct an in-depth study of grazing rights and concessions in and around national parks, as recommended during the process of imposition of restrictions, is a matter of grave concern. This denial of a people-centric study at the inception stage is now cloaked by the eulogised image of the park's status as a UNESCO World Heritage Site.
- 36 "The concept of 'untouched wilderness or untamed land' is mostly an urban perception. The inhabitants of rural areas have different views of the areas considered as 'wild' by the urbanites, they do not consider the forest to be wild; it is their home" (Pompa and Kaus 1992). To protect this ancient community, its cultural heritage and traditional knowledge of sustainable livelihood, it is necessary to understand the policy contradictions that restrict and thus destroy traditional livelihoods for the sake of conservation but lead to compromises with the hydropower projects in the same location. Successful conservation depends on the extent of local support and the positive attitudes of residents of the community towards conservation policies (Rao et al, 2002). In the case of the NDBR, the areas that suffered huge economic losses without any alternative source of income have a completely negative attitude towards conservation, whereas areas like the villages above Tolma or the villages in the Kumaon region of the NDBR have a positive attitude towards conservation. The reason for this positive attitude is that these villages are reaping the benefits of the alleged social welfare schemes of the Forest Department and have not lost their source of income or traditional rights over their forests because of the creation of the NDBR.
- 37 The construction of more and more hydro projects is certainly detrimental not only to the communities of the region but to the geological formation of the area, too. The devastation caused by the cloud burst and floods in the Kedarnath Valley and in Uttarkashi in 2013 was intensified by the fragile mountains, victims of continuous blasting and construction activities (Chopra, 2014b). The current paper does not go into the issue of the construction of dams, as the matter is currently pending before the

Supreme Court of India. However, some of the options to give relief to the communities could include the redressal of grievances through recognition of the Forest Rights Act of 2006, which makes provision for granting forest rights to the communities living in and around forest areas. Another form of relief could be to take the example of Bhutan (Cannon, 2009) and regularise the open sale of *Cordyceps sinensis*. *Cordyceps sinensis*, locally called keeda jadi, is a fungus that grows on larvae of the Himalayan ghost moth and is used in traditional Chinese medicine. Collected from the alpine Himalayan meadows, it is considered one of the most expensive medicinal fungi (Holliday & Cleaver 2008). A majority of the villagers from the Niti Valley are involved in the collection of *Cordyceps sinensis*. By regularising trade in this fungus, the community would be able to sell it on the international market and receive an appropriate price for their collection rather than be deceived by smugglers, as is happening at present.

- 38 The government may also consider opening the border for cross-border tourism between India and the Tibet Autonomous Region (TAR), as it has done in the Kumaon region of Uttarakhand. The communities residing on both sides of the traditional trade routes suffer from marginalisation due to remoteness, inhospitable terrain and a lack of livelihood opportunities. The Bhotiyas were traditionally involved in cross-border trade and after 1962 in tourism. In view of the ongoing process of development and conservation, cross-border tourism would help to restore the local economy. Using tourism as a tool for poverty alleviation through community-owned tourism could help to address some of these issues. The traditional trade routes reopened between India and TAR could be converted into top-selling adventure tourism destinations. These new products will directly benefit economies of both countries in ways that go beyond steering the overall dialogue towards peace and prosperity. At present only the traditional traders are allowed to cross over the border to revive traditional trade. However, against the background of changed socio-economic and political circumstances in Tibet, the only viable product to offer is cross-border tourism.
- 39 While travellers from both sides are allowed to visit the border areas in both countries, a stage-wise introduction of cross-border international tourism between the two countries and a gradual upscaling appears to be the only ways to harness the vast tourism potential of these regions and also ensure its equitability (Naitthani 2013).

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ABSTRACTS

Both the hydropower and the conservation sectors are concentrating their focus on the Himalayas, which have high hydropower potential and rich bio-cultural diversity. The aim of this present study, carried out in villages adjacent to the Nanda Devi National Park in the Himalayan state of Uttarakhand in India, is to understand the linkages between conservation- and development-induced displacement and the process of designing compensation packages for the local community. The study also examines the various gender-specific impacts of displacement, and the results suggest significant gender-specific differences regarding the impact of displacement in critical respects. The findings further indicate that, despite an early recommendation to do so, no impact assessment study had been conducted prior to the notification of the area as a national park. Furthermore, there appears to be no systematic linkage between the compensatory schemes and the grievances of the impacted communities.

INDEX

Keywords: Himalaya, Tribal, National Park, Displacement, Hydroelectric, Conservation

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