A story of conservation refugees: vulnerability and coping strategies

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Abstract: In recent times, concerns regarding forest loss – indicating decline in natural capital assets and ecosystem services, have multiplied because of the implications for climate change. Considering that Some 12 to 20% of annual green house gas emissions into the atmosphere are attributable to land cover changes, including forest losses, eagerness of governments across the continents to bring more and more areas under 'Protected Area' category for exclusive management is understandable. However, understanding the implications of this institutional change is important as it raises issues of livelihood vulnerability of people moved out of Protected Areas. This paper examines the costs imposed on a community moved out of Tadoba-Andhari Tiger Reserve in 2007, in terms of food security, availability of fuel wood and fodder, income from sale of NTFPs resulting in overall reduction in welfare. The paper also discusses various coping strategies adopted by the community in past 4 years.

Key words: protected area, relocation, livelihood vulnerability, adaptation, India.

Introduction

Importance of forest, in the world threatened by climate change, has been repeatedly underscored by committees and scholars in the past decade or so. On the one hand the Stern review indicts deforestation as a particular land use change producing up to 41% of emissions (pp 170), it offers afforestation and reforestation along with curbing deforestation as a highly cost-effective way to reduce green house gas emissions (pp 537), on the other. Even the IPCC (2007) attributed land-use change and fragmentation to the present ecosystem change, particularly of biodiversity. In response to these concerns the present attempts to protect

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around 40 million sq. km (about 30%) of total land under forest, which decreased worldwide by 0.22% per year in the period 1990-2000 and 0.18% per year between 2000 and 2005, have gained momentum resulting either in increasing incentives or in added restrictions. One of the expanding institutional structures for forest protection is the 'Protected Area' network, which is considered not only an assured 'carbon sink' but also store of biodiversity. By the end of the 20th century, over 100,000 protected area reserves had been established across the world, covering about 13% of the Earth's land surface (Jenkins and Joppa, 2009). This expansion has been especially rapid in the past few decades, with protected areas now viewed as one of the last remaining bastions of refuge against an almost unstoppable tide of deforestation (Nagendra et al. 2006).

The goal of this paper is to bring to fore an often neglected issue in the debate of climate change – the unintended outcomes of the very process of mitigating climate change. In this case the issue is the cost borne by the communities that are relocated for making Protected Area inviolate. While it is important to prepare for the likely disastrous impacts of climate change through measures of mitigation, it is necessary to make sure that these do not inadvertently lead to creation of victims. With the sole focus to protect and propagate forest, it is likely to overlook the fact that there are number of communities living in and around forest, mostly sustainably, for whom forests are their homes, and 'protection' regimes for them can become a cause of homelessness.

In this paper we first present the current debate over Protected Areas, which is followed by a brief description of the case study along with the details of research methods. Then are the results and discussion presented.

The 'Protected Areas' debate

According to IUCN, Protected Area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term

conservation of nature with associated ecosystem services and cultural values. While the need to protect biodiversity, including wild life, is not debatable, how it is done, is. Countries that have long history of co-existence of humans along with wild life have typical implications of exclusive form of conservation. Concerns of conservationists regarding fragmentation of land due to increasing demand for agriculture resulting in habitat destruction of some faunal species, is justified. It is also important to ensure continued existence of small as well as large animals by protecting corridors for their natural migration. For this purpose, conservation without parks will not always be possible. Some areas will definitely have to be set aside, devoid of human interference (Shahabuddin and Rangarajan, 2007: 5). Need for keeping such inviolate areas (1% of landmass) was also endorsed in the Tiger Task Force report, 2005. Apprehensions of Indian conservationists like U. Karant and V. Thapar are not out of place when they say that the fate of tigers in India would have been the same as that of the cheetah and other extinct species if stringent legislation had not come in place on time. However, it is equally important to understand that creation of Protected Ares (PAs), solely for the purpose of bio-diversity conservation, have important consequences for communities located inside and on the fringes.

The widely accepted definition of conservation namely, management of human use of the biosphere so that it may yield the greatest sustainable benefit while maintaining its potential to meet the needs and aspirations of future generation (IUCN *et al.* 1981: 14), is often assumed to mean that locals over exploit the resource, thus total ban on activities by the locals is a must. The role forests play in the household economy of forest dwellers is one crucial factor that is not sufficiently understood, or in some instances, misunderstood (Hegde & Enters 2000). The mind set that the locals and their livelihood adversely affect conservation, continues to prevail almost for a century when the restrictions on forest use were imposed for the first time. Many believe that the practice of equating nature conservation with the establishment of PAs under the Forest Department's exclusive control, leading to the banning of subsistence uses of living resources, has been based on false premises, namely, only the state machinery can protect biodiversity; conservation of biodiversity is no concern of development agencies but is a

monopoly of Forest Department; creation of new protected areas will enhance the prospects of protecting biodiversity; exclusion of subsistence demands is essential to biodiversity conservation; existing protected areas do effectively conserve biodiversity; and bureaucratic and technical experts know best how to conserve bio diversity (Gadgil 1998). Not surprisingly, all this leads to the perception that "locking up biodiversity in small parks, while ignoring wider social and political realities, has been an ineffective strategy" (Colchester 1997: 107).

The 'Relocation' Issue

Although relocation of people from wildlife areas has been one of the tools utilized historically for creating large continuous and undisturbed habitats that can sustain viable animal populations and functioning ecosystems, relocation has had a controversial legacy. It has been opposed on grounds for being inequitable and forcible in many cases, and as leading to cultural and material impoverishment and loss of livelihood security for the oustees due to ineffective and inadequate rehabilitation (Cernea 2000, Sharma & Kabra 2007, Rangarajan & Shahabuddin 2006, West et al 2006), at times resulting in local hostility to the wildlife.

This happens mainly because the approach of local communities towards forest as a resource, their traditional sustainable resource use practices do not receive due attention by the advocates of 'exclusive' forest management policies. Therefore, declaration of PAs and resulting relocation is rarely preceded by discussions with the communities that are likely to be affected. In fact for efficient management of a PA, ensuring 'fairness' is essential, and therefore, communities' preferences need to be taken into account through high level of discussion with them (Costanza & Folke 1997; Fortin & Gagnon 1999). Disregarding this, in practice, PAs are declared as if these areas were unoccupied, neutral spaces (Finger-Stich & Ghimire as referred in Fortin and Gagnon 1999) resulting in serious consequences like relocation or eviction of the affected population. In an important study on conservation-related resettlement in Central Africa, Schmidt-Soltau (2003) has pointed out various social risks the relocated population faces: landlessness, joblessness, homelessness, marginalization, food insecurity, education losses, morbidity and mortality, loss of access to common property, and social disarticulation.

The adverse impacts of resettlement programs on the out going population are primarily due to the lack of attention to socio-economic and cultural constraints that forest-dependent people face in re-establishing secure livelihoods in an alien environment, particularly when people are transitioning from a forest-dependent lifestyle to an agricultural livelihood. Such constraints are heightened in situations where basic infrastructure is not fully developed in the resettlement site, compensatory packages are low and inadequate, and the needs and aspirations of the oustees are not taken into account (Shahbuddin and Ghate 2009). Today, there is a general consensus that displacement of people should be the last resort for consolidating wildlife habitats, given the traumas and uncertainties of displacement. Yet, village relocation might be necessary in certain situations, such as where human-wildlife conflicts seriously threaten livelihoods and where settlements fragment otherwise viable habitats for endangered species. Relocation might be necessary to safeguard core tiger habitats where biomass extraction activities can endanger forest integrity.

Whenever relocation is undertaken, it should be carried out with attention to the livelihood and cultural needs of the oustees, based on adequate rehabilitation packages. There is a need to realize that in many cases, people are ready to move out of remote parks where employment opportunities are limited but often do not want to do so given the uncertainties of developing secure livelihoods and lack of faith in the government to deliver the promised benefits (Shahabuddin *et al* 2007).

Indian Context

The subcontinent of India is a good example of the tensions between conservation and development. India has 661 PAs, including around 100 Parks, 514 Wildlife Sanctuaries, 43 Conservation Reserves, and 4 Community Reserves. The number of Tiger Reserves in the country is 38, the very first being the Jim Corbett National Park, set up in 1935[3]. Around five percent of the country's land surface, currently managed under the Protected Area regime, is

[3] http://currentaffairs.gktoday.in/2010/05/number-of-protected-areas-in-india.html

largely interspersed with human populations. The communities located within Protected Areas – National Parks, Tiger Reserves, Wild life Sanctuaries - find themselves subject to strict restrictions on the harvest of forest products that are a significant component of their traditional livelihood. The process of park creation also puts additional restrictions on the development activities for the indigenous, low-income villages, since development and infrastructure activities are often not permitted within the park. While programs like Eco-development, aimed at reducing forest dependence of human population living on the fringes of such Protected Areas, receive heavy funding, little attention is paid to the communities living within parks who are the most disadvantaged as long as they are inside. An often perceived solution for dealing with the problems of people within parks is to resettle them outside the protected area (Ghate, 2003; McLean & Straede, 2003).

Study Area

Village Bhagwanpur is the resettled village constituting of village Botezari and part of village Kolsa, both shifted from the Tadoba-Andhari Tiger Reserve (TATR) in 2007. The TATR is located in the central Indian district of Chandrapur, in the state of Maharashtra (see Figure-1). In 1935, an area of 116.55 sq. km was first demarcated as a sanctuary for wild animals, and subsequently declared the Tadoba National Park in 1955. In 1986, the area under protection was expanded to include the adjacent Andhari Wildlife Sanctuary, an area of 508.85 sq. km. In 1995, the two protected areas were incorporated into the TATR under Project Tiger, a wildlife conservation project of the Indian Government aimed at protecting the Bengal tiger (Ghate, 2003; Khawarey and Karnat, 1997). The TATR covers an area of 625 square km, in a landscape largely dominated by dry tropical forests, interspersed with grasslands and water bodies (Nagendra et al. 2006). This central Indian forest landscape is rich in biodiversity, with over 41 mammal species and 195 bird species (Khawarey and Karnat, 1997). The TATR is situated in a landscape where people and forests have coexisted for centuries, in six villages. Resettlement of these villages had long been on the agenda of the Maharashtra Forest Department.

TATR is surrounded by forest patches categorized as Reserve Forest and Protected Forest, which are lower categories of forests in relation to PAs as far as protection is concerned, and act as a buffer. 53 peripheral villages fulfill a large part of their fuel, fodder, timber and non-timber forest requirements from the park (Khawarey and Karnat, 1997; Nagendra et al., 2006). The TATR also experiences substantial seasonal use from migrant herders, and is frequented by timber, bamboo and wildlife poachers (Ostrom and Nagendra, 2006). Over 60,000 tourists visit the park each year, and their number is growing, with a number of tourist lodges and hotels being set up around the park to cater to these visitors (Mawdsley et al., 2009). Despite recognition of the pressure on the park from these diverse sources, park authorities remain focused on resettlement of the villages as providing a major solution to problems of park degradation (Ghate, 2007; Ghate and Beazley, 2007). Little attention has been paid to identifying different groups of users, quantifying their relative impacts on the park, or to developing approaches to differentially manage these impacts (Nagendra et al. 2010).

The relocation site, initially known as *Kesalaghat* and now village Bhagwanpur, is located in Chandrapur district of Maharashtra State. It is geographically located at (longitude) 20°10’14.4” N, (latitude) 78°06’30.0” E, and 170 meters above mean sea level. It is about 10 km from Mul, the sub-district place and is on the Mul-Chandrapur road. Out of a total 1100 hectare of forest belonging to Forest Development Corporation of Maharashtra (FDCM), 550 hectare was handed over for the relocation purpose. Four villages namely, Tolewahi, Nagala, Mandatukum, and Chiroli, had already been using the FDCM forest part of which was cleared for relocation. The whole area is divided into four sections. Section A constitutes agricultural land for village Kolsa and is very close to a stream called *Kesalaghat nala.* Section B is agricultural land for Botezari village. Section C, which constitutes 170 hectares is used for the *gaothan* or the village settlement. The other facilities like public health center, school, panchayat building etc are located in this section. Section D is the agricultural area earmarked for the third village Palasgaon, (the community which eventually did not agree to be resettled), and is separated from the rest of the area by a railway line (Mehra 2004). Botezari was the smallest of the six

villages located inside TATR, with 56 households and 187 livestock, while Kolsa had 133 households (of which only 48 households relocated) owning 792 livestock.

Research Method

We have been associated with the villages in TATR since 1999 when SHODH carried out a census survey of six villages namely, Rantalodhi, Kolsa, Botezari, Palasgoan, Jamni, and Navegaon. A full documentation of the forest dependence along with other subsistence and livelihood sources of the six villages was done at that time. Along with the nature of forest dependence, value of the forest products consumed was also imputed (Ghate 2003). Although the talk on likely relocation of these six villages had been on since 1986, actual process began only after 2001.

In 2003-04, we collected forest information using biodiversity plots (Forest Plot[4] information in the IFRI protocols[5]) at the relocation site while the forest was yet to be cleared from the 1100 hectare patch belonging to the FDCM. A pre structured questionnaire was also administered in Botezari for 32 households.

During 2004–05 we used another IFRI protocol to assess the socio-economic and institutional conditions of the six villages living within the park. We also conducted 101 household interviews with selected individuals in each village, with 22 individuals interviewed in Kolsa, 19 in Rantalodhi, and 20 each in Palasgaon, Jamni, and Navegaon. Interviewees were selected in a stratified manner so as to sample across ethnic groups, income categories, and genders. During these interviews, we assessed the relationship of the respondents to the park, assessed

[4] Forest plots under the IFRI methodology are 10-meter circular plots, which are divided in 1-meter, 3-meter and 10-meter circles. Seedlings and herbaceous species are counted in the one-meter circle. In the three-meter circle saplings, shrubs, and woody/herbaceous climber species are considered. Where as in the ten-meter circle all trees are counted that are above 10 cm in DBH. Other aspects of forest health like, soil quality, crown cover, insect damage, anthropogenic indications, soil erosion and similar other indicators are also recorded.

[5] International Forest Resources and Institutions (IFRI), co-housed by the University of Michigan and the Workshop in Policy Analysis, Indiana University in USA, has developed a set of ten research instruments to facilitate collection of information about demographic, economic, and cultural characteristics of communities dependent on forests, along with botanical data of the forest. The set of ten pre-structured questionnaires is filled in using rapid appraisal and in-person interview method.

attitudes towards the park, used biodiversity plots, remote sensing analyses and social-institutional surveys as three independent datasets to assess the nature of human impacts on the park in terms of three different aspects – plant diversity, land cover change and fragmentation, and people's perceptions.

In 2007, immediately after the villages were moved to Bhagwanpur, SHODH conducted a quick (pilot) household survey of 46 households, just before a Cambridge University student conducted her Ph.D study at the site.

Apart from using some data collected during the above mentioned studies, the present paper is mainly based on survey of 34 households (29% of the 118 households) and individual interviews of key informants, all conducted in the months of March and April 2011.

Results

We now present some important results of our previous studies to put the current arguments in proper perspective.

Forest dependence study, 1999: It highlighted the fact that the six villages located inside TATR were slated for relocation since 1986, were suffocating because the development initiatives of the government had been stalled. The villages were not only isolated with poor infrastructure and connectivity, they had few employment opportunities, and faced exploitation because of the suspension of their rights on forest produce. However, their dependence on forest remained high. While 25.36% of household income came from farms and forest wages, 7.33% came from illicit bamboo poaching, and as much as 67.39% came from the consumption of forest products like fodder, fuel wood, medicinal herbs and vegetables (Ghate 2003).

The relocation study, 2003-04: A case study of Botezari village revealed that almost 46% of household income came from bamboo poaching. Of the total consumption (paddy, minor forest products, fodder, fuel wood, and bamboo), 82% came from forests. Although there were some

apprehensions regarding relocation, especially over irrigation facilities at the new place, people were over all looking forward to moving out of the PA due to stranded development, crop loss to wild herbivore, and few employment opportunities in Botezari (Mehra 2004).

Park-people relationship study, 2004-05: The study indicated that the six villages within TATR were all surrounded by a mix of dense and open forest, with very little surrounding non-forest. They were highly dependent on the forest for their daily existence, and identified 19 species utilized for timber, 17 for fuel wood, and 5 for non timber forest products, harvested for personal use as well as for sale. The respondents indicated high losses due to wildlife, mainly due to crop raiding, and some cases of livestock death and a few significant cases of human attacks. Despite the high losses suffered due to wildlife depredations, most respondents – between 90% and 100% across all villages – indicated that the continued existence of the forest was critical for their subsistence, as well as to fulfill their economic needs (Nagendra et al 2010).

Pilot study, 2007: to take advantage of the relocation package offered by the government for relocation, many joint families split into several families with adult married sons forming separate households. This increased the number of households in the two villages. Each household was given a standard house of 500 (erstwhile landless) to 600 (land owners) sq. feet, with tiled roof. Households that were landless in the previous village were given 2 acres of land and the land holding families received 4 acres of agriculture land. Each household was given an electric connection and tap water connection. Households were allowed to bring from their previous homes, all the cattle, timber, fuel wood, agricultural implements etc. Most of the households also received the 'Project affected person' certificate almost immediately after the relocation. On the flip side, in the first agriculture season very few households could get any produce due to poor quality of land, uneven and inefficiently tilling, and lack of irrigation facility. Another major problem faced was regarding availability of forest products. Five villages harvesting from just 550 hectares of the remaining FDCM forest land was posing serious scarcity of fuel wood and fodder. The employment opportunities that the project authority had

promised to Bhagwanpur villagers were not available. With failed crops, majority of the households had to look for work in the nearby villages which were already antagonized by the imposition of this new village in the vicinity. This was so because on the one hand half the forest (550 of the 1100 hectares belonging to FDCM) was cut down and now there were 118 additional families sharing the remaining forest, accentuating the scarcity.

The impact of relocation study, 2011:

Basic civic amenities: The two villages that moved out of the PA were poor in civic amenities as is clear from the following table. In comparison to that the new location i.e. village Bhagwanpur is much better on the count of majority of the civic amenities.

Table -1: Relative distances of basic facilities

Sr. No.	Distance (in km) / Facility	Before relocation		After relocation
		Botezari	Kolsa	
1	All weather road	12	19	04
2	Post office	12	0	0
3	Primary health center	26	0	04
4	Police Station	35	61	14
5	Sub-district headquarter	75	45	14
6	Market	12	45	04
7	Bank	30	30	04
8	Middle school	12	0	06
9	College	35	30	14
10	Ashram school	30	0	07
11	Telephone	35	30	0

Demographic features: At present there are 118 households in Bhagwanpur, of which 34 have been surveyed including 6 women respondents. The range of the age of respondents is between 18 and 70 years. Seven respondents are illiterate, 14 are primary educated, 10 have

studied up to 10th standard, and only 3 respondents have either put in 11 or 12 years of education. 29 respondents are engaged in farming their own land as well as working as farm laborer, 3 respondents work exclusively on their own farms, and 6 work only as farm laborers since their own farms are not arable. Two of the respondents have salaried jobs. The average family size works out to 4.4 members.

Housing: Out of 34 households studied, two do not own a house. These are the individuals who did not get separated from their joint families in the previous village, and hence did not get an allotted house in their name. They presently occupy vacant houses since not all families from Kolsa shifted though houses for all of them were already constructed. As the houses are small, 90% of the households studied, have reportedly extended their houses by an average of 200 square feet, mainly building a kitchen on the back side, and roofing it with tiles. The houses were not provided with a bathroom as well. Excepting one, all other households owning a house have made a temporary bathroom using bamboo mats.

Cattle shed: An integral part of any rural household, cattle shed was not incorporated in the alternate housing provided by the relocation authorities. Therefore 25 out of 34 households studied have built cattle shed of their own, while the 7 cattle less households have not done so. Similarly, it is a common traditional practice to have an extended shed in front of the house, an area used for informal chit chat with neighbors and visitors. In all 26 households got it made by themselves.

Land ownership and crop production: Of the 34 sample households surveyed, 21 did not own agriculture land in their previous locations. Two households had encroached small areas, and only 11 households on an average owned 1.8 acres of land, producing 727 kg of paddy on an average. Of the 11 households, seven households produced paddy in excess of their consumption, hence sold 3200 kg (average 457 kg) in all, earning total Rs.37400 i.e. on an average Rs. 5,342 per household.

The picture was different in 2007, immediately after relocation. All households now owned land – the erstwhile landless getting 2 acres and the land holders getting 4 acres irrespective of the amount of land they previously owned. Of the 34 sample households, one did not own land,

and one did not sow anything. None of the farmer had access to irrigation. 25 farmers had sown only paddy in their farms, while two farmers had sown pulses exclusively, other four farmers had sown pulses along with paddy. One farmer had sown only soya bean. Of these only 13 farmers were able to get some yield – total yield being 2175 kg, averaging to 167 kg. Only four farmers could afford to sell 350 kg of their yield, together fetching Rs. 7400.

The situation did not improve much even by the year 2010. Although 23 sample households tilled their land, four farmers did not get any produce. The remaining 19 farmers grew on an average 815 kg, of which 13 farmers could sell a part of their crop (totally 6159 kg, per head 473kg), which earned them Rs. 5277 per household.

Livestock ownership: Over the years livestock has increased, however the combination has changed substantially in favor of goats and bullocks. The number of cows has declined from 66 in 2004 to 63 to 2007 to 45 in 2011. The number of households owning cows reduced from 22 to 20 after relocation. Bullocks and goats were distributed by the Department of Tribal Development, and this gets reflected in the sample survey. Although grazing of goats in forest is considered harmful by the Forest Department officials, Tribal Development Department has gone ahead and distributed these since goat meat has good market, and thus potential for increasing household income.

Wealth indicators: The number of bicycles, motor cycles and radio owners has remained more or less same between 2004 and 2011. Most striking change is in the number of TV sets (from 2 to 6 to 16), music systems (from 1 to 4 to 9), fans (from 3 to 6 to 17), and cell phones (from 2 to 7 to 20). Availability of power and exposure to the outside world has clearly shifted the priority for electronic goods and means of entertainment. Five of the respondents reported of owning LPG stove given by the Tribal Development Department. Almost all the households had received the LPG connection, but majority sold it off since refilling is expensive, and alternative fuel wood is available for free.

Dependence on forest: dependence on forest was enumerated on four products – timber, fuel wood, bamboo and *moha* flowers. Timber is required by the villagers mainly for construction, extension of house, agriculture implement, and sheds in front or back of the house. While prior

to relocation 19 species of timber were available, presently only seven species are available. Timber was not sold earlier, nor is it sold now. It is used only for self use. The average distance travelled for collecting timber has risen from 1.5 km to 4 km now. Similarly for fuel wood only 5 species are now available as against 17 species at the earlier location. For collection of bamboo as well, households now have to travel 4.3 km on an average, which was 1.97 km earlier. Before relocation, all the villagers used to collect *moha* flower which was available in abundance. Now only 80% of the households collect it. While in old times, most of the produce was consumed by the households adding to their nutrition, now almost 30% of the collection is sold off for ready cash.

Threat from wildlife: It is interesting to see that the respondent perceive the threat from wildlife to have increased in the relocation site. While within the PA large number of herbivore ensured sufficient prey for the carnivores, due to degraded forest in the vicinity of Bhagwanpur on the one hand and spill over of leopards and few tigers from TATR on the other, village cattle have become easy prey. Attacks on humans are also not unknown. At the same time crop depredation, which was very high in the older villages, has substantially reduced in the new location due to low number of herbivore in the adjoining degraded forest.

Quality of life: Through various studies conducted by SHODH, we have been continuously involved with the two communities Botezari and Kolsa till 2007, and thereafter in Bhagwanpur. We have not only witnessed their earlier lives, but the actual process of relocation and then their struggle to stand back on their own after the relocation. The villagers often allowed us to participate in their day-to-day discussions, forgetting our being outsiders. Recording case histories as an ethnography tool, wherein perceptions in cultural changes are tried to be captured, has been used in this study. Although analysis of the data is still in progress, at this point a few observations can be shared indicating that socially and culturally the community has lost its soul after the relocation. Two major indicators towards this are – the community celebrations during *Ganesh* and *Durga* (the two Hindu deities) festivals, which was a common practice in the earlier locations are no more celebrated; and *gaon patil (*village leader), an institution which is a traditional part of indigenous communities, does not exist any more. The

social fabric of the community is disrupted; mutual dependence found commonly among farming communities, has reduced substantially; alcohol consumption which was limited to religious and social functions in the earlier villages has now become an abuse, especially because instead of consuming home brewed alcohol made from *moha* flowers, now the synthetically made alcohol is purchased from nearby markets.

Family as an institution is also breaking up, firstly because the joint families were shown to have broken into several units to take maximum advantage of the relocation package. And after relocation, dearth of employment opportunities, as well as better access and information, have taken away the young boys of the village to distant urban centers. Of the 34 sample households 10 households reported that young boys from their family had gone to cities like Chennai, Nagpur, and Hyderabad in 2010 and 2011. There are only few young boys left back in the village, especially those who do not have siblings to take care of the agricultural operations. Those who have left the village in search of employment have taken up only menial jobs due to lack of training of any kind. They work overtime to make more money to be sent back home, probably at the cost of their own health.

Welfare index: An attempt has been made to compare the level of welfare/feeling of well being as perceived by the communities in 2004, 2007, and 2011. For this we identified 12 indicators that the community considers important determinant of wellness. The scores are presented in the table below. The scores vary from minimum of 1 to maximum of 5, higher values indicating higher level well being. This analysis clearly shows that although the wellbeing is perceived to be better now, it had dipped immediately after relocation. The reduction in the welfare is the cost borne by the community for protection of a tiger reserve.

Table-2: Welfare Index

Sr. No.	Indicator	2004	2007	2011
1.	Housing	4	2	3
2.	Access to education	1	2	4
3.	Opportunities of employment	2	1	4
4.	Ownership of agriculture land	2	4	5
5.	Productivity of land	3	1	4
6.	Livestock	2	3	4
7.	Wealth indicators	1	3	5
8.	Species diversity in adjoining forest	5	2	1
9.	Accessibility to forest products	5	2	1
10.	Crop depredation	1	2	3
11.	Threat of cattle lifting	3	1	1
12.	**TOTAL**	**29**	**23**	**35**

Discussion

This study reminds me of the two important questions that Krishna (2010) asks – Does one merely needs to wait for the economic growth to overcome poverty? Or is something more active and purposeful required? Similarly, in the context of relocation as a necessary corollary of exclusive form of forest management, one feels like asking – does relocation necessarily lead to heavy cost to be borne by the ousted communities? Or can ways be found to make the changeover less cumbersome, and to the mutual advantage of PAs and relocated communities?

It is clear that in case of Bhagwanpur, welfare plummeted immediately after the relocation. The evidence lies in the incidence that took place in 2009 when some villagers, tired of their life of starvation, went back to the old settlement Botezari in the hope of starting cultivation again on their old farms. They were arrested and although all of them got out of jail on bail, court cases

are pending against them and every month they have to report at the court hearing leading to mental and financial stress. Half of the Kolsa village is in no mood to shift since it has witnessed the plight and hardships at Bhagwanpur, and not much land is left for the community of Palasgaon which was also to be part of the relocation package. Even then, the project officials continue to flaunt this relocation as a 'model' relocation to be followed elsewhere. The efforts put up by the Tribal Development Department to improve the income level of the Bhagwanpur villagers, such as distribution of goats, cows, and bullocks, have been arbitrary, hence, not of much use. The department officials neither took into consideration whether the 'beneficiaries' needed these animals nor did they bother to enquire if they had the skills to convert these incentives into income sources. Majority of the goats, bullocks and cows given by the Tribal Development Department immediately after relocation were sold off in distress.

When asked if they wanted to go back to their old village now, none of the respondents answered in affirmative. The respondents believe that their situation has improved gradually over the past four years. However, the credit for this goes mainly to the resilience and diversification of coping strategies adopted by the relocated households. One of the common strategies adopted by the relocated households is migration to urban areas. With no specialized skills, most of the young migrate to urban centers like mega cities of Chennai, Mumbai, Hyderabad, and Nagpur – for menial labor. In the long run this is likely to increase the pressure on the already over stressed urban areas, negatively impacting the environment of these places. Concentration of population in cities means increased stress of infrastructure, aggravating scarcity of potable water and electricity, while adding to air pollution and solid waste – all these issues are regularly discussed in the context of climate change. On the other hand, such consequences can be avoided by better planning and execution of relocation strategies. A few recent cases in India show that it is possible to undertake rehabilitation justly through involvement of the oustees in the planning and resettlement process if certain affirmative actions are taken (Shahbuddin and Ghate 2009) (see Appendix-1). Financial packages have recently been increased by ten-fold in India with the realization that sufficient compensation can help people re-establish themselves. A just relocation with positive effects

on incomes and social infrastructure can lead to smooth transition for the communities that need to move out of dense forest areas for the global good.

The Stern Review emphasizes the role of old forest by bringing out the limitations of new forest:

Depending on the species, a tree may take 100 years to reach maturity, and much more land would have to be allocated for new forests to obtain the same amount of carbon absorption as would be released from burning an existing forest of mature trees. The biodiversity and other co-benefits of new forests are also likely to be much lower than those for natural forests. For these reasons, international support for action to protect existing forests should be kept distinct from the creation of new forest though the latter is also important (pp 538).

While we plan to reduce negative impacts of climate change, precaution is necessary to ensure that the very process doesn't produce conservation refugees.

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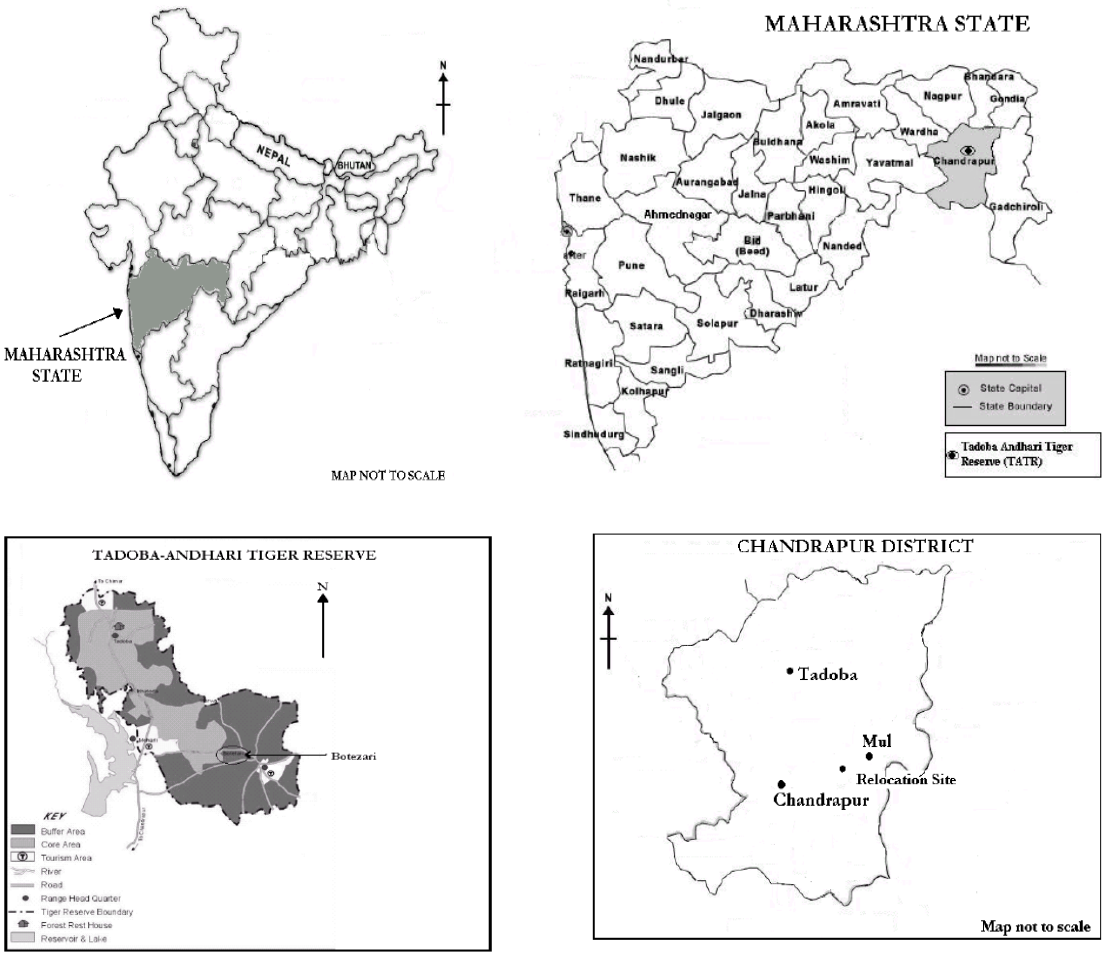
Figure: 1



Appendix-1: Relocation and Resettlement	
Area of Action	***How to Achieve the Goal***
Substitution or improvement of pre-relocation standard of living and access to amenities	*Baseline socio-economic and forest dependency assessments are required before compensatory packages and rehabilitation plans are drawn up, so that existing livelihoods can be secured or even improved.*
Participation of oustees in plan development	*Involvement of proposed oustees as partners rather than adversaries, and negotiations on equal terms, can turn them into allies for wildlife conservation.*
Substantial relocation package	*The relocation package should compensate the oustees over and above their existing assets in order to make relocation attractive; governments need to invest more in rehabilitation measures*
Transparency and accountability of administration	*Transparently functioning administration can increase trust of oustees in the government machinery and smoothen the transition process; greater accountability is needed in administration.*
Development infrastructure in resettlement site	*Development infrastructure and amenities should be in place before the physical movement of people (such as roads, electricity, water sources)*
Livelihood support beyond relocation	*Livelihood support should be provided to the oustees in the relocation site until the new livelihoods are fully secured, in the form of cash compensations, agricultural inputs and raw materials for any cottage industry.*
Conducive legal framework	*Laws to be enacted to put the onus of effective rehabilitation on district/forest administration*