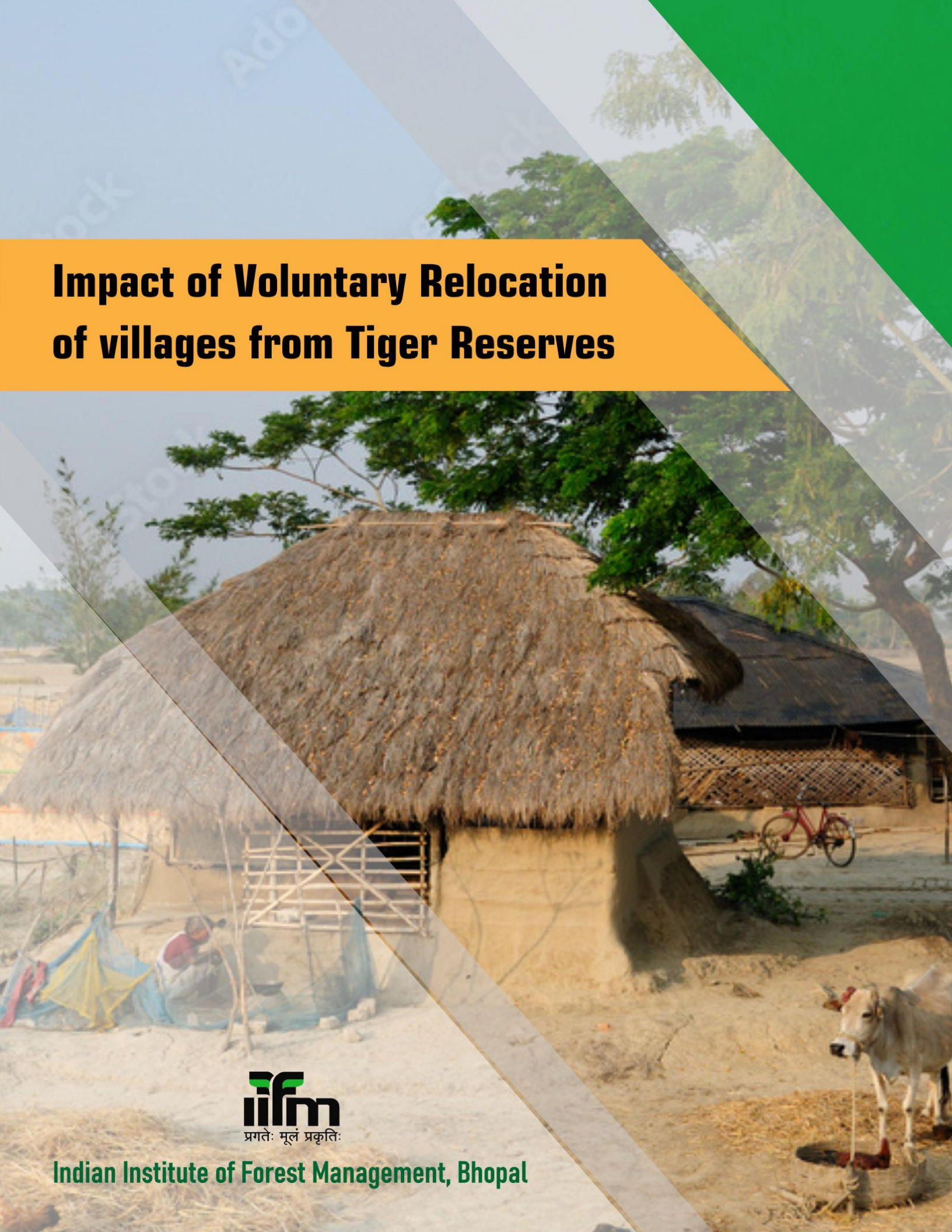
Impact of Voluntary Relocation of villages from Tiger Reserves



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Introduction

The tiger is a critically endangered top predator that has been the focus of attention of conservation action in India since Project Tiger began in 1973. Since the beginning of Project Tiger, the population in India has increased from a low of about 1500 to almost 4000. Since tigers require a large home range and are territorial animals, the current estimates are that protected inviolate areas of at least 800-1200 sq km is required for a viable tiger population

A tiger reserve consists of two parts, viz., 'a core or critical tiger habitat', and 'a buffer or peripheral area'. The core area is to be identified on the basis of scientific and objective criteria, and is to be kept inviolate for tiger conservation, without affecting the rights of the indigenous people. The voluntary relocation of people needs to be done only in these identified core areas or critical tiger habitats in tiger reserves so as to make them inviolate.

Biological scientists and forest managers are doubtful about the possibility of co-existence of human beings with wildlife and see relocation as the only way to ensure ecosystem integrity and survival of species. The concept and practice of relocation, on the other hand, has been criticized by activists and some social scientists as being insufficiently participatory (Lasgorceix and Kothari 2009). Several Tiger Reserves have had relocation and rehabilitation programs implemented over the years. Hundreds of villages have been relocated. It is important to understand the effect of these relocations on the people, the habitat and the wildlife. It is therefore proposed to use mixed methods- qualitative methods for increased understanding and the rigorous quantitative framework of impact evaluation studies, to evaluate the impact of relocation on both the habitat as well as the lives of the relocated people in all the tiger reserves in the country.

The package for rehabilitation and relocation of villages in these core areas is as follows:

Option 1: Payment of the entire package amount (Rs. 10 lakhs per family) to the family in case the family opts so, without involving any rehabilitation / relocation process by the Forest Department.

Option 2 – Carrying out relocation / rehabilitation of village from protected area / tiger reserve by the Forest Department.

(a) Agricultural land procurement (2 ha.) and development 35% of the total package
(b) Settlement of rights 30% of the total package
(c) Homestead land and house construction 20% of the total package
(d) Incentive 5% of the total package (e) Community facilities (access road, irrigation, drinking water, sanitation, electricity, telecommunication, community centre, places of worship, cremation ground) 10% of the total package.

In addition, "Handholding" after relocation would be ensured through the forest department, with eco-development and social work through both central assistance and district administration involving convergence of schemes. In this effort help of competent independent agencies can also be obtained may be sought wherever available (Karanth 2005). The relocated villagers should also be given priority for livelihood options emanating from the protected area. Village relocation is an important issue in tiger reserve management and needs to be examined closely (Rangarajan and Shahbuddin 2006)

Review of Literature

An exemplar of successful relocation is the case of the Satpura Tiger Reserve (Singh 2014). STR covers 1428 km^2 in area, and is located in the Narmadapuram district of the central Indian state of Madhya Pradesh in India. It includes three administrative units, the

Pachmarhi and Bori Wildlife Sanctuaries, and Satpura National Park. The STR relocation is widely considered to be amongst the best executed amongst tiger reserve relocations, and has created a huge block of inviolate tiger area in STR. Previous studies have attempted to qualitatively evaluate the lives of the relocated villagers (Bhilegaonkar et al 2020). While it is very important to ensure viable tiger populations, relocation and rehabilitation projects need to be sensitive to the aspirations and way of life of the indigenous communities, and relocations have often been criticized as an effect of western 'top down' notions of wildlife management (Costanza 2011). Increased attention to a rights-based approach has been recommended before undertaking such relocations (Sarma and Barpujari 2022). The successful relocation programs of Bhadra Tiger Reserve, Rajiv National Park and Corbett Tiger Reserve have been associated with good governance structures and coordination between the forest department and villagers and fair compensation (Lasgorceix and Kothari 2009).

Sariska Tiger Reserve, where widespread poaching had resulting in the local extinction of tigers in 2004 (GOR 2004, Shahabuddin et al. 2007) has also relocated several villages from the core areas. Several studies have looked at the process and results of the relocation process (Shrivastava 2009; Dixit 2016; Purva and Sajjad 2016a). Market access in the relocated site and restriction of access to forest resources in the original site were important factors in the willingness to relocate in this tiger reserve, where villagers also reported a decrease in income and increase in expenses as a result of relocation (Purva and Sajjad 2016b. A decline in livelihood security has also been reported from Kuno (Kabra 2003), though there have been numerous improvements in the quality of the R and R package since then. In Similipal access to educational facilities, transport and health care were reported to be some of the immediate benefits after relocation but food security of the displaced households is found to be adversely affected due to reduced crop diversity and output (Dash and Behera 2018). In and around Corbett Tiger reserve resettlement has been suggested to better livelihood opportunity to the pastoral community of Van Gujjars and also to

enhance their economic status. Because lopping of trees leads to a lot of damage to the forest, it is to be expected that relocation would lead to habitat recovery leading to better biodiversity conservation. In Nagarhole, there has been reported that there is a genuine demand for voluntary relocation, but that the process had been delayed due to various factors. (Desai and Bhargava 2010). Similarly in Tadoba, the villagers were actively wanting to relocate in order to obtain a better quality of life (Ghate and Beazeley 2007).

In the light of these varying reports it is important to understand the social and economic effects of relocation from Tiger Reserves using a unified methodology, and identify the factors that are responsible for successes as well as failures.

Objectives

The objectives of the study are:

A. Impact on the relocated villagers

1. Measure the impact of relocation on the change in household income of the villagers
2. Quantify the difference in vulnerability to climate change due to relocations.
3. Measure changes in the quality of life using various standard indicators.

B. Impact on the wildlife habitat at the original site of the relocated village

1. Quantify the changes in vegetation at and around the relocated village areas.
2. Quantify the changes in wildlife abundance at and around the relocated village areas.

Methodology

There are 54 tiger reserves in the country in 18 states. Many tiger reserves have had relocations stretching back to the 1970s, from Kanha. This provides an opportunity to quantify the effects at various time intervals after the relocation process. Tiger Reserves will be selected from various parts of the country, after consultation with NTCA. Villages will be sampled from these tiger reserves after appropriate stratification. Stratification will be done using social and ecological criteria after understanding the specific characteristics of each location. It is proposed to sample about 10 percent of relocated villages from these Tiger Reserve.

Impact on the relocated villagers: Structured interview schedules at the household level, interviews with key informants, focus group discussions and qualitative methods like PRA will be used to gather data. The impact on relocated villagers will be measured using methods like Propensity Score Matching and Double Difference, which are standard quasi-experimental techniques to measure differences between the treatment (Relocation) and control (cases where villages are not relocated). Appropriate Impacts will be identified at both the household and village levels. These will include impacts on income, wealth and asset creation, vulnerability to climate change, and changes to quality of life.

Impact on the wildlife habitat at the original site of the relocated villages: It is expected that there will be vegetation recovery at abandoned village site. The site undergoes a restoration process including removal of man-made structures, removal of weeds and habitat management measures. The effect of this is expected to be an improvement in conditions for wildlife to use the site. Some changes are immediate while other changes take place over several years. The affected area will be gridded with appropriate sized cells. Vegetation plots will be laid in each cell, at various distances in and around the abandoned village site to monitor the recovery process. Pellet and dung plots will be used

to quantify the extent of wildlife use of the area. Occupancy modelling will be used to quantify use of the area and habitat by both herbivores and carnivores. Models of occupancy at target sites will be compared to adjacent sites where there has been no relocation as well as comparable habitat that have not had human use and inhabitation. Quantitative measures of the effect of relocation on probability of use by wildlife will be obtained by this method.

Budget

Budget Head	Expense
12 Senior Research Fellows @41500 per month for 6 months	Rs 29,88,000
1 Research Associate@55000 for 6 months	Rs 3,30,000
Travelling, vehicle hire and accommodation for faculty and researchers	Rs 13,00,000
Satellite imagery and software	Rs 5,50,000
Report designing, publication	Rs 5,00,000
Miscellaneous@3%	Rs 1,70,040
Contingency@2%	Rs 1,16,760
Institute overheads @15%	Rs 8,93,220
GST @18.5%	Rs 11,93,131
Total	**Rs 68,48,020**

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