Displacement Due to Development of Projects: A Case Study of Lucknow District in Uttar Pradesh

THESIS

SUBMITTED TO

BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
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Declaration

I declare that thesis entitled "**Displacement Due to Development of Projects: A Case Study of Lucknow District in Uttar Pradesh**" submitted to Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow for the award of Doctor of Philosophy in Economics. It is my original work and it has not previously been produced for any degree, diploma, certificate, fellowship or similar other titles anywhere.

This research study is carried out under the supervision of Prof. Sanatan Nayak, Department of Economics, School for Ambedkar Studies (SAS), Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, Uttar Pradesh, India. It is also declared that the thesis is essentially free from all kinds of plagiarism.

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Preface

The basis for the study titled "**Displacement Due to Development of Projects: A Case Study of Lucknow District in Uttar Pradesh**" creates from the development activities in india. Growing population, urbanization, demand for making infrastructure is continuously increasing day by day etc. Economic development positively leads to use of agricultural land for nonagricultural purposes land in india. Natural resources share declines such as land, trees, etc. this research work is focused on displacement and land acquisition due to the development projects implementation. Displacement directly impacted the suffering comminates such as socio-economic condition, livelihood pattern, and compensation, creating inequality among displaced and land acquired people.

This study is an attempt to understand displacement and land acquisition impact on land lost people and families. Data shows that agricultural production has been declining along with agricultural land due to land acquisition. So displaced people's income, consumption, education, employment situation also changed. There are major risks associated with displacement such as landlessness, homelessness, joblessness, health issues, education, environmental quality etc.

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List of Abbreviations

GOI	Government of India
NSSO	National Sample Survey Office
GDP	Gross domestic product
WHO	World Health Organization
DIDR	Development Induced Displacement and Resettlement
RFCTLARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement
IRR	Impoverishment Risk and Reconstruction Model
DID	Development Induced Displacement
PPP	Public-Private Partnership
LLA	Land Acquisition Act
IDMC	Internal Displacement Monitoring Centre
IDPs	Internally Displaced Persons
SAPs	Sustainable Agricultural Practices
BPL	Below Poverty Line
SC	Schedule Cast
ST	Scheduled Tribes
OBC	Other Backward Class
LPG	Liquefied Petroleum Gas
LRA	Logistic Regression Analysis
WB	World Bank
UP	Uttar Pradesh
ES	Ecosystem Services
EDs	Electronic Databases
EPW	Economic Political Weekly
Chi2	Chi-Square
INR	Indian Rupee
SDVI	Socio-Demographic Vulnerability Index
EVI	Economic Vulnerability Index

SNVI	Social Networking Vulnerability Index
HVI	Health Vulnerability Index
FVI	Food Vulnerability Index
NCVI	Natural Capital Vulnerability Index
CVPVI	Climate Vulnerability and Pollution Vulnerability Index
LVI	Livelihood Vulnerability Index
EIA	Environmental Imapct Assessment
SIA	Social Impact Assessment
NHAI	National Highways Authority of India
ADB	Asian Development Bank
SBM	Swachh Bharat Mission

Chapter 1

Economic Development and Displacement: Issues and Challenges

1.0 Introduction

The large-scale investment in infrastructure projects took place after independence for economic development in India. The rising investment promoted stakeholder's demand for land procurements in infrastructural projects such as highways, airports and residential complexes, dams, canals, power sector and urban development projects (Cernea and Mudilal 1993: 3-5; Roy 2016: 1-3; Parasuraman 2016: 35-56; Nathan 2009: 22-26). Indian history has great proof that economic development causes massive displacement (Cernea 1993: 3-7). During the last two decades of the previous century, development programs forcefully displacement 10 million people per year, or around 200 million people globally (Cernea 2000: 3659). Global displacements have thus become a global issue with livelihood insecurity and homelessness. Development projects need land; hence, economic development and land acquisition are positively correlated. Land acquisition has resulted in issues of displacement and resettlement of most backward areas of Asia and Africa (Dhagamwar et al 2003: 12-13; Patel et al 2002: 159-172). Affected people are suffering from numerous adverse effects including food crisis, access to community resources, and identity (Koenig 2009: 119-139; Cernea 2003: 37-45). Displacement can be distinguished into voluntary and involuntary movement, and both of them crease livelihood issues, unemployment, and community- violation (Robinson 2003: 13).

With these evidence, present chapter reviews to examine the issues and challenges with land acquisition and resettlement and rehabilitation of project affected population. It is divided broadly into five sections. First section highlights the issues

and challenges of displacement. The second section is based on the literature review, the third section on the research gap, objective and hypothesis. The fourth section is based on the methodology, and the fifth section on conclusion.

1.1 Development Induced Displacement: International and National Experience

The concept of development-induced displacement is that the population move from one place to another either voluntarily or forcefully. The concern arose because of a dramatic rise in development-induced displacement in the 1970s and 1980s propelled mainly by a global infrastructure boom and coupled with painful and disastrous outcomes in resettlement experiences (Dwivedi 2002: 709). It is estimated that the number of dams still exists, over 800,000 and at least 80 million people are displaced worldwide. Millions of people have been forced to move, often due to dams in China and India (Sims 2001: 103-104). All development projects are the potential cause of displacement (Vandergeest 2003: 48). Affected families of the Qianping Reservoir in China and builds a livelihood (Gong et al 2020: 1). Living nears their original residence or households with a reasonable income structure have higher livelihood resilience. Apart from other socio-economic factors, agricultural income and physical capital have the most significant impact on livelihood resilience. Poverty reduction, environmental sustainability, and good governance need to focus on this side (Heredia et al 2012: 1). A major cause of development induced displacement is the loss or significant reduction of access to essential resources (Terminski 2012: 1). Land, pastures, forests, clean water will all be lost if the existing residence is abandoned (Ambaye et al 2015: 310).

Man is revolutionary by nature and never looked back, as it has been experienced since industrial revolution of the 17th century. Our society has thrived on

global growth and prosperity (Mohanty 2011: 67-73). Economic growth, social and cultural advancement are all part of economic growth. Technology must be used to improve production, create jobs for the growing population, and increase factors productivity. Problematic areas, power projects were developed, mines were excavated, canals were dug, irrigation systems were created, and railways and roads were built. Therefore, infrastructure projects increased productivity and production. However, most displacement studies observed the deterioration of the living conditions and pauperization of the displaced, the inadequate rehabilitation and resettlement efforts (Mohanty 2011: 67-73; Swamy 2011: 153-63). The state saw large development projects, like Hirakud Dam, Rengali, Upper Kolab, Indravati, Subarnarekha, etc., and large industries as Rourkela Steel Plant, NALCO, HAL. Several private firms have either signed a Memorandum of Understanding with the government or have set up a state-owned unit. However, numerous studies observed adverse consequences of displacement and resettlement due to large-scale involuntary displacement of weaker sections of the society. Several hydro projects were constructed to generate power and supply irrigation water to farmlands and flood control (Potter 2016: 1-9; Potter 2020: 1-3). The Bhakra Nangal, the Damodar Valley project, the Tungabhadra project, and the Rihand dam were built (Maitra 2009: 191-211). Singur and Nandigram are the only two places that have caused people to think and talk about land use planning (Roy 2014: 50).

The shifting from tradition to modernity has led to a growing expansion in economic development projects and a stable political and socio-cultural environment. Violence and forced relocations have become routine in India (Bhattacharya 2007: 1898-99). Over the decades, unprecedented growth in population is continuously increasing (Mikovits et al 2014: 1147-56; Mikovits et al 2018: 9-16). A rising

percentage of population is faced the rapid urbanisation and urban infrastructure development. Many economists have observed the close connection between population and early economic development (Chu 1997: 294-304). Population impact on poverty alleviation and living standards, effects on food, natural resources, growing landlessness, etc. (Doyen 1974: 1-3). Rapid population growth burdens on limited natural resources (Easterlin 1967: 98) land pattern change (Bilsborrow et al 1990: 125). The size and growth rate of the population may affect social security (Srinivasan 1988: 4).

1.2 Issues in Displacement and Resettlement: A Review

A comprehensive literature review is used to locate existing relevant peer-reviewed studies, formulate research questions, and evaluate their respective contributions. Literature are collected from numerous electronic databases (EDs) such as Elsevier (sciencedirect.com), Scopus (scopus.com), Springer (springerlink.com), Taylor and Francis (taylorandfrancis.com), Sage Journals (journals.sagepub.com), JSTOR (jstor.org), Economic Political Weekly (epw.in) and Mendeley (mendeley.com).

1.2.1 Displacement and Impoverishment Risk: The Nexus

The social, economic and environmental consequences of large dams are worse than other infrastructure projects (Mehta and Srinivasan 2000: 1-2). Large-size projects are considered huge diversity, which dramatically affects the ecosystem and society. The changes in the environment, social organization, family, community, kinship networks, natural resources, infrastructure development, and production processes occurred due to numerous dams across the globe (Horowitz et al 1993: 179). The reallocation experience was stressful and different in various stages of development (De Wet 1988: 180; Mukul 1996: 259). Their traditional role in shaping society has

been disrupted, control over their social institutions has been disrupted, and their lives have been disrupted (Cernea 2000: 192-98; Jigoulov 2016: 625-27). Some other issues related to impoverishment risks such as joblessness, homelessness, marginalization, food insecurity, increased morbidity and mortality, loss of access to common property, social disintegration, loss of access to community services, education, livestock and violation of human rights were also observed in different parts of the globe due to land acquisition and displacement.

Displacement creates a great deal of stress and disruptions in all communities (Dwivedi 2002: 709). Loss of connection to historical, religious, symbolic, or spatial locations decreases cultural identity. Development-induced displaced people experienced psychological stress and feelings of helplessness and distrust towards their government and humanitarian groups. Protest actions, campaigns, public actions, protests and resistance opened up the policy domain to accountability and transparency. Many development projects have caused major changes in land use (Thukral 1996: 1500). The rural economies were derived from land allocation and increased production.

1.2.2 Economic Consequences of Development Induced Displacement

The 1990s can appropriately be considered the decade of popular resistance to displacement (Baviskar 1995: 1). There were new forms of political activism because of development-induced displacement. Displacement has also resulted in the breakdown of social and family networks, such as social and financial networks. Millions of people pay the price without reaping any benefits (Parasuraman 1995: 195-208). Social impact assessment is also important before the construction of dams or highways, airports. Because displacement significantly affects livelihoods, land

acquisition must be avoided (Mehta and Srinivasan 2000: 1; Kanango 2004: 351-61; Saxena 2008: 351-52). Land conflicts occur because land can be given preferentially to the landless (Dwivedi 2002: 710-12; Parsuraman 1996: 191-220). Landless farmers took place in specific sectors work like agriculture (Mohanty 2007: 737-41).

1.2.3 Land Use Pattern Change due to Development Activities

Human population growth and resource demands have put pressure on natural land resources (Santos 2014: 1). Despite these pressures, significant land acquisition for conservation has occurred throughout history. Land acquisition has been a major prerequisite for post-independence development. Most of these projects have resulted in large-scale land-use changes (Thukral 1996: 15). Most of the urban expansion and development activities have taken place on agricultural land (Asif 2000: 2007). The loss of arable land has become a nationwide phenomenon (Modi 2009: 154; Mehta 2000: 12-15). Loss of arable land leads to an impact on the agricultural sector (Sharma 2010: 503-24). The massive land convergence in Odisha also significant (Upadhyay 2016: 79-96) due to dams, roads, and highways created environmental degradation (Nabhi, 2006: 135). Distant drivers of land change, interconnections between geographically separated social-ecological systems, and consequences of land-use changes and displacement of land continuously increase across countries (Meyfroidt et al 2013: 2). Non-agricultural land users have accounted for a relatively small share of land use, but this share is rapidly growing over the years (Hoda 2018: 1). The reason behind the land-use change is modernisation and urbanisation of the economy.

1.2.4 Land Acquisition and Resettlement Cost Perspective

Land disputes, farming practices, land clearing, and land reallocation out of agriculture. The main issues are providing decent alternative livelihood support to the

poor and land ownership relations (Wahi 2017: 1). The national policy for resettlement and rehabilitation for displaced persons has many positive aspects and limitations. But the land acquisition bill ignores the draft policy and is anti-people. As a result, it should be rejected and a new law needs to be enacted that upholds some basic principles (Farnandes 1998: 2703). Successive regulations have followed a regulation enacted in 1824 in India. The colonial state took possession of the property to turn the country into a raw material supplier and capital for the British industrial revolution. Acquisitions promote economic development (Chakravorty, 2014: 488). An announcement by the ministry of rural development emphasised infrastructure, land development and urbanisation (Sampat 2013: 40).

Land Acquisition Act was replaced with the right to fair compensation and transparency in land acquisition, rehabilitation and resettlement (RFCTLARR Act, 2013, in which landowners are compensated at least four times of market prices in rural areas and twice of market prices in urban areas and consent of 80 and 70 percent of affected landowners must for acquiring land for private and public-private partnership (PPP) projects, respectively (Singh 2016: 67-68; Mahalingam and Vyas 2011: 94-102; Asif 1999: 1564-66; Sharma et al 2018: 1). It was assessing the social and environmental impact of land acquisition (Rew et al 2000: 12-51). Typically, compensation for land acquisition is paid in cash, based on market prices below market prices. Groups most efficiently absorbed economic benefits with higher economic resources and higher human capital levels (Sinha and Jha 1996: 1453-60).

1.2.5 Implementation Issues of Land Acquisition and Displacement

Conflicts over land acquisition are increasing day by day. Poor land acquisition and displacement promises harmed peasant trust. It was taken from them after the acquisition (Palit 2004: 2961-63). Land acquisition (or eminent domain) is a hotly

debated issue in India (Chakravorty 2016: 49). Development induced landless people, primarily women, who were not compensated. Innovative provision such as 'public purpose' has sparked serious concerns about the land acquisition act across India. (Ranjan 2017: 234-34; Sampat 2013: 40; Ghatak et al 2013: 32-44; Patil 2017: 548-64; Fernandes 2004: 1191). Rapid urbanisation is causing irreversible changes in cities and peri-urban areas worldwide (Onyebueke et al 2020: 1; Singh, 2020a: 1-13). Urbanisation and its associated politics and resistances completely ignore customary tenure loss and substitution how they are being used to promote or resist displacement or eviction. According to Uttam Sahoo and Bipin Jojo (2020), the resettlement issue illustrates several consequences of displacement and how it affects people and communities. However, while the Indian state has promised resettlement and rehabilitation to development-driven displaced people; it has focused mainly on neglecting rehabilitation. It refers to the doctrine of the "eminent domain of the state" and how it has exacerbated the vulnerability of displaced communities. Patil and Ghosh (2017) Compensationprocess of acquiring new land, displaced farmers are marginalised due to transaction costs. Before new land is acquired, it has focused on the link between monetary compensation and investment decisions. Post-displacement scenarios and landowner investment decisions have not been thoroughly examined. Local land characteristics, uncertainty in the search for alternatives, and information constraints may impose high non-monetary costs on displaced farmers, forcing them to settle for cheap new land.

Land acquisition for PPP projects faces the land owners and other is environmental clearance issues. It also delays land acquisition in pockets of land within forest areas, eco-sensitive areas, wildlife sanctuaries, tribal belts, reserve forests, national parks, etc. (Sinha and Jha 2016: 1-3). Land acquisition has displaced

farmers from their land and forced them to diversify their land livelihoods (Roy 2014: 15-20). The disparity in estimated per capita monthly consumption expenditure between project-affected and non-affected farming households is more significant. There may be limits to stopping land displacement without aggressive legislation capping water grabs or a radical shift in how water is valued and redistributed to the landless (Steinberg 2013: 48-55). Bottled water, private water tankers, water permit systems, or even land redistribution is traditional alternatives to meeting drinking water needs designed by and for the less poor. A variety of mitigation techniques are explored, including those inherent to common property resources (CPR).

1.2.6 Livelihood Security of Displaced Population

Owen 2020 Mainstream economists and corporations view social problems as pre-existing issues or indirect consequences for which they cannot or do not want to bear responsibility (Singh, 2020b: 1-23). The assumption is that there is no interdependency between industrial activity and the host environment. Theoretical issues become real issues for policymakers. Because the proximate cause of displacement is associated with a private developer acquiring or using land as part of its core business activity, the utilitarian argument for externalising issues is more challenging to sustain. Either to replace infrastructure lost to the project footprint or as benefits to displaced people in exchange for their land. As a result of externalised costs, developers can construct state responsibilities. Kumaran (2013) Social and Economic Risk emphasised that displacement is a necessary part of planned development. Most of those displaced are poor and marginalised members of society. Involuntary displacement and resettlement often cause socio-economic and cultural issues. Customary rights and privileges, land alienation, and livelihood security are all

examined. The majority of landless and marginalised people expressed an emotional attachment to forest and land.

Mason et al. (2012) Malnutrition and mortality were higher among displaced people than host populations from 1997 to 2009, and the mortality/malnutrition relationship changed over time, needs to be changed to identify intervention priorities better. With limited resources, this could help prioritise scarce resources and save lives. Taylor (2009) argued that the current triple crisis of food, oil, and credit had exacerbated social instability across global capitalism, with the most severe effects displaced onto the urban and rural poor who, faced with rising prices for staple goods, face deepening poverty. Increasing social unrest has prompted global governance institutions to assess the crisis security implications.

1.3 Research Gap

The present study has reviewed articles on displacement and land acquisition by the development projects, livelihood issues, impoverishment risk, land acquisition, right to fair compensation and transparency in land acquisition, rehabilitation and Resettlement act (RFCTLARR), and many more aspects. The majority of studies are either used field survey data or used old published data from during 1980- 2004. Further, the majority of studies have examined the empirical analysis of land acquisition and livelihood crisis of displaced population. None of the studies accessed the livelihood vulnerability of the displaced population in Uttar Pradesh (UP). Further, Identification of socioeconomic and demographic indicators of jobless, homeless, food insecurity is also a prerequisite to examined post- displacement effect on the project affected population. Hence, this study bridges this gap by utilizing field survey data and indicators & binary logistic regression statistical tools.

1.4 Objectives of the Study

1. To examine displacement and resettlement situation in India induced from the development of projects.

2. To examine the socio-economic status of the affected people in the surveyed villages.

3. To examine the livelihood vulnerability of displaced peoples in the surveyed villages.

4. To examine the impoverishment risk and decline in environmental quality in the surveyed villages.

1.5 Hypothesis of the Study

1. There is no significant impact of development projects on agriculture land and displacement.

2. There is a positive association between displacement and livelihood vulnerability in the surveyed area.

3.There is a positive relationship between development of projects and impoverishment risk, environmental quality.

1.6 Methodological Framework

1.6.1 Data Sources

In order to capture the above-mentioned objectives, relevant data have been collected from numerous secondary and primary sources. Secondary level data were collected from World Bank (WB) on non-agricultural land use; land use pattern change data from Ministry of Agriculture & Farmers Welfare, displacement data are collected from National Sample Survey Officer (NSSO) to examine the intensity of displacement. To collect information on impact of land acquisition and displacement, primary level data are collected through village survey 2019.

For collection of primary data, multi stage approach is carried out for selection of sample households starting from selection of state to households in villages. First,

the selection of state is accomplished based on number of projects across states in India. Over the decades due to continuous increase in population growth lead to rapid urbanisation and urban infrastructural development (Mikovits et al 2014: 1147-1156; Mikovits et al 2018: 9-16). As Uttar Pradesh is one of the leading states having large number of projects due to urban development and infrastructural projects, therefore, Uttar Pradesh is selected purposefully. Second, the state has 75 districts and 18 Zones[1]. Among all the zones, central zone is chosen based on its location and size of population. Further, central zone has 6 districts, viz., Hardoi, Raebareli, Sitapur, Lakhimpur, Unnao and Lucknow. Among all the districts in central zone, Lucknow is having highest population (Table 1.1).

Table 1.1 Lucknow Zone (Central Zone) wise Population of Uttar Pradesh 2011

Lucknow zone (Central zone)	**Total Population**
Hardoi	4092845
Raebareli	2903507
Sitapur	4483992
Unnao	3108367
Lakhimpur	4021243
Lucknow	4589838

Source: Economic & Statistical Division State Planning Institute Planning Department, Uttar Pradesh

Further, the percentage share of the urban population in the district is 66.2, as against 22.3 of the population in urban areas of the state (Census 2011: 17). The population density is 1,816 people per square kilometer (sq. k.m), which is more than twice the state average of 829 persons per sq. k.m. The sex ratio is 917, which is higher than the state average of 912 females per thousand males. It ranks 6th in literacy with 77.3 percent, which is higher than the state average of 67.7 percent. The decadal growth rate of a population is 25.8, which is higher than the state average of 20.2 percent.

[1]18 zone viz., Agra Zone, Prayagraj zone, Aligarh zone, Azamgarh zone, Bareilly zone, Basti zone, Chitrakoot zoon, Devipatan zone, Ayodhya zone, Gorakhpur zone, Jhansi zone, Kanpur zone, Lucknow zone (Central zone), Meerut zone, Moradabad zone, Saharanpur zone, Varanasi zone.

(i) **Sampling Technique and Size**

Third, after selection of State and district**,** two development blocks out of eight blocks, viz., Kakori and Sarojini Nagar are selected (Matti, New Garura, Ghuswalkalan, Yusuf Nagar villages purposefully selected from two blocks). Four, one village (Matti village has displaced due to construction of Agra Expressway) is selected from Kakori development block and three villages (New Garura village displaced due to construction of Chaudhary Charan Singh Airport Amausi, Ghuswalkalan village land acquired for Awadh Slip Gram and Bhagirathi enclave and Yusuf Nagar village land acquisition for construction of the residential building) from Sarojini Nagar development block are selected based on displacement and land acquisition. Matti and New Garura village land and home have been acquired by the government and the remaining two villages Ghuswalkalan and Yususuf Nagar villages land acquired by private authorities. Five, proportionate sampling technique is opted for selecting households at the villages level based on the total number of existing households. Eventually, 30 samples from Matti village, 95 samples from New Garura, 62 samples from Choti Guswalkala, and 63 samples from Yusuf Nagar village have been collected. A total of one district, two development blocks, four villages and 250 samples have been selected. Sample households were selected purposefully at displacement and land acquisition (Roy 2016: 1-19). Further, pilot survey was conducted in November 2018 to collect information on land acquisition and displacement purposes. After getting a correction in the questionnaire, field survey at village level was conducted during January to February 2019 from 250 households.

(ii) Statistical Techniques and Estimation Method

The present study uses mixed methods to analysis the secondary and field surveyed data. As far as estimation methods are concerned, the present study uses descriptive statistics for macro data. In contrast, the indicators approach is used to assess the livelihood vulnerability status of the displaced population. Further, the logistic regression model is used to evaluate the determinants of living status such as basic amenities, education, employment, land size, income, a distance of educational institution and BPL etc.

Descriptive Statistics

Descriptive statistics are used to describe the basic need of both secondary & primary data. With the help of mean, standard deviation, percentage, graphics analysis, etc., analyses the data at the initial level.

Indicator Approach

The present study has adopted an indicator approach to developing a livelihood vulnerability index. The adopted method can overcome some of the difficulties. The process can be applied at a variety of scales (Eriksen and Kelly, 2006). Application at administrative and community scales, the LVI can help identify human populations at significant risk, and as a result, resources can be targeted towards those most in need. These indicators are selected as a stepwise method for addressing livelihood security, development linkages, and the economic, social and environmental dimensions (Halsnas and Trarup, 2009; Singh 2020c: 222-26; Singh and Sanatan, 2020: 110-129).

The adopted methodology was developed by Iyenger and Sudharshan (1982: 2047-51). After being normalised to a scale of zero (0) to one (1) based on their functional relationship with the dimension; because the indicator has a positive relationship with LVI, equation (1) was used to calculate the indicator's value.

$$Y_{ij} = \frac{K_{ij} - \quad Min(X_{ij})}{Max(X_{ij}) - Min(X_{ij})} \qquad (1)$$

Where, Y_{ij} is the index for the i[th] indicator related with j[th] village, K_{ij} is the actual/observed value of i[th] indicator for the j[th] village, $Max(X_{ij})$ and$Min(X_{ij})$ is the maximum and minimum value of i[th] indicator among all the J (I= 1……n) village, respectively. If the indicator has a negative functional relationship with LVI, then equation 2 was employed.

$$Y_{ij} = \frac{Max(X_{ij}) - K_{ij}}{Max(X_{ij}) - Min(X_{ijk})} \qquad (2)$$

Weight

The assignment of appropriate weight for different components is an important issue in the construction of an index (Nayak and Singh, 2020; Singh and Kumar 2021: 26-45). Therefore, using equation (3 & 4), weights were calculated.

$$[\mathrm{W_i} = \frac{\mathrm{K}}{\sqrt{\mathrm{Var(Cid)}}}] \qquad (3)$$

$$Where, [K = \frac{1}{\left\{\frac{1}{\sum_{i=1}^{n}\sqrt{Var(Cid)}}\right\}}] \qquad (4)$$

Where 'Wi' denotes the weight,$\mathrm{Var(Cid)}$ is variance of $\mathrm{Y_{ij}}$. Weight is multiplied in the index value (normalised values) calculated in equation 1 or 2.

$$Z_j = \frac{\sum_i^k Y_{ij} * W_i}{\sum_i^k W_i} \qquad (5)$$

$\mathrm{Z_j}$ is the index score for the jth village,$\mathrm{W_i}$ is the weight corresponding to i[th] indicator, k is the total number of indicators and $\sum_{\mathrm{i}}^{\mathrm{k}} \mathrm{W_i}$ is the summation of weights. The index value close to zero (0) shows weak livelihood vulnerability and the index value close to one (1) shows strong livelihood vulnerability.

Logistic Regression Analysis (LRA)

Further, logistic regression is used to analyse the six major components, which directly affect the socio-economic condition of the displaced population. Each indicator has been used separately to observe the likelihood of socio-economic factors on each component. Through, these indicators capture the significant impact of independent variables. The following function in the form of logistic regression is used.

$$L_i = In\frac{P_i}{1-P_i} = \alpha_i + \beta_i X_1 + e_i$$

Wherein, L_i = dependent variable based on binary type (0,1), X_i = this is a matrix of the independent or explanatory variables, B_i = coefficient of unknown parameter, and e_i = is the error term.

1.7 Organisation of the Thesis

This Thesis consists of seven chapters, which are as follows.

Chapter 1: entitled "**Economic Development and Displacement: Issues and Challenges**," consists of five sections viz., issues and challenges related to development displacement, land acquisition, land pattern change, literature review, finding research gap, objective and hypothesis, fourth section deals with the methodology part and fifth section on conclusion.

Chapter 2: entitled "**Theoretical Linkages of Economic Development with the Induced Displacement**," explores conceptual and theoretical linkages of economic development with displacement.

Chapter 3: entitled "**Extent and Dimension of Displacement in Indian Context**" Indian Context," finds the association of land use, total production and number of projects at the state level and compresses that project details and cost allocation of respective projects at the state level. The situation of the displaced population across states based on the number of projects in India is analysed.

Chapter 4: entitled "**Socio-Economic Profile of Study Area**" is based on field survey data deals with descriptive analysis at respective village levels. Explore all the variables' pre and post impact on how socio-economic variables are changed in the pre and post-project scenario.

Chapter 5: entitled "**Assessing of Livelihood Vulnerability Status of Surveyed Villages**," Vulnerability Assessment of Project Affected People of Surveyed Villages," first side analysed the agricultural situation displaced people's and the other side is that used livelihood vulnerability at the village level. The analysis is carried out by capturing the positive and of development projects on the study area.

Chapter 6: entitled "**Impoverishment Risk and Environmental Quality**" deals with the impact of displacement on different socio-economic variables and it is tested with the help of logistic regression. Furthermore, find out the perception-based analysis is done by various environmental-related variables.

Chapter 7 entitled "**Major Findings, Conclusions and Policy Recommendation**" deals with chapter wise summary of major findings, concluding remark, policy suggestion, limitation and further scope.

1.8 Conclusions

As the need for infrastructure development increases in economic development, new projects such as airports, roads, and urban centers like new residential and commercial buildings increase rapidly. Because of this, livelihood patterns of landholders and agriculture production is being affected. Many studies suggest that the proper use of natural resources can hamper economic growth. Further, the process of land acquisition directly involves families lose their land without adequate compensation and rehabilitation. To understand land acquisition, compensation, and rehabilitation in detail, we have selected four villages at Lucknow district of Uttar Pradesh along with secondary level analysis.

Chapter 2

Theoretical Linkages of Economic Development with the Induced Displacement

2.0 Introduction

The development process is highly intertwined with economic growth and the well-promoting well-being of society (Larrain 2013: 1; Nordhaus et al 1992: 1; Singh et al 2021: 33-44). Infrastructure development leads to the displacement of populations worldwide (Dwivedi 2002: 1-24). In the 1990s and till date, development-induced displacement became a key outcome of economic development and social change. The continuously growing economy leads to dramatic rise in development-induced displacement from infrastructure projects in the 1970s and 1980s that came along with much painful resettlement challenges. Development activities exacerbate concern for economic welfare. However, land acquisition and displacement put large number of people at risk. According to proponents of Neo-Malthusian theory, massive displacement could occur in the most densely populated countries that most vulnerable to natural disasters and environmental changes. As a result, the term "environmental dislocation" has been replaced by "environmental migration." Many of these conflicts are financed primarily by non-participants.

The views on traditional, neoclassical, neoclassical and modern economic growth, environmental degradation and social benefits differ (Terminski 2013: 7-11). Increase environmental degradation in unsustainable economic activities, for instance, deforestation and clearing of land for construction and settlement projects. Development projects, such as building barracks and roads, also harm indigenous people. Development leads to mass displacement (Cernea 1990- 2000). All categories of displaced persons are similar. They lose houses and lose land, wells, workshops, sales outlets or other assets temporarily. Their systems of production are demolished, their livelihoods are disrupted, and their livelihood is critically undermined.

This chapter explains the theoretical linkages of economic development with development induced displacement and land acquisition issues. Development activities are interlinked with the displacement theories like Harries Todaro, Rawalsian, Chambers three-stage model, Cerneas' Model of Impoverishment Risk and Reconstruction Model on displacement.

2.1 Economic Development and Welfare of Society

Economic activity and livelihood satisfaction among displaced people after displacement (Mandishekwa2020: 114-40). Establishing the economic consequences of displacement enables an understanding of a development-led approach to displacement. The study shows the importance of development-induced displacement in displacement and land acquisition studies. A development-led approach maximises the utility and productive assets of the displaced, allowing them to contribute to public revenue, and improves their lives by providing resources (Zetter 2014: 1-8).

Majority improvement only works when the social judgment by used of majority rule. Contrary this view seems to be in line with the Kaldor-Hicks's efficiency criterion but can also be perceived to be in contrast with the Pareto optimality criterion. Cernea (1994, 3) states that 'It is essential for successful project implementation of development projects to 'put people first'. The Kaldor-Hicks criterion argues that a welfare improvement will only occur if the losers consider their losses to be less than the gains by winners (Mathis & Steffen, 2015: 31-45). This conclusion, however, is difficult to reach considering that, usually losses get higher weights from rational individuals than gains. However, some IDPs may benefit from the project (Cernea and Schmidt-Soltau 2003: 42-51). Considering Pareto optimality, displacing people for developmental reasons does not improve the majority's social welfare without affecting IDPs' welfare. Therefore, a household is expected to take certain risk

management behaviors when they are displaced, to maximise utility (Vlaev (2018: 3). After displacement, IDPs lose land resulting in economic de-capitalisation (Cernea, 1997a). Because most rural households depend on land for survival, being displaced is tantamount to impoverishment, for example, by being unable to grow food. Also, observed other ripple effects from landlessness such as food insecurity.

The study found that DID is based on neoliberal economic arguments that expect everyone to benefit despite the consequences for IDPs. It is not always true that benefits will cascade across the country. For example, Pareto optimality states that it is impossible to improve one person's welfare without affecting another's. With no other option, the government acts as a dictator by forcibly displacing people as predicted by Arrow's impossibility theorem. The Kaldor-Hicks efficiency criterion states that an increase in welfare is only possible if losers value gains more than losses, which is unlikely among IDPs given the losses incurred (Mandishekwa2020: 130).

2.2 Theories of Economic Development

Economic development is necessary for economic growth, so economic development and development activities are positively associated with displacement. Practices and theories of development in the contemporary world are closely associated with the forced displacement (Robinson 2002:1).

The documentation on DIDR includes case studies in large part. Several theoretical frameworks have been proposed to explain relocation's social ramifications, but the facts have yet to reveal which of these theories is most accurate. Two models (Scudder and Colson's four-constructed model and IRR model) are described below and many other theories. Specific discussion includes different risk levels for the people who have been moved worldwide due to development.

2.2.1 Scudder-Colson Model

Scudder and Colson suggested a four-stage model explored that how people and socio-cultural systems respond to resettlement based on previous approaches, which primarily addressed voluntary resettlement processes (Stanley 2004: 13). The stages were recruitment, transition, potential and transfer or incorporation (Scudder 1993: 123-52; Scudder 1996: 49-74; Scudder 2019: 267-87).Policymakers and developers formulate development and resettlement plans in the recruitment phase frequently without informing displaced persons. During the transition, people learn about their future displacement that increases stress. After physical relocation, potential development takes place. Displaced persons begin the reconstruction process of their economy and social networks. The transferor integration refers to the second generation of residents identified with and feels at home in the community by handing over their local production systems and community leadership. Once this phase is achieved, it is considered successful resettlement. It was built around the 'stage' idea of settlers' developmental changes in response to stress and behaviors. Initially, the model was applied to voluntary processes. There afterwards, Scudder incorporated the four successive stages of involuntary resettlement. This model does not apply to operations that fail and don't complete.

In the final two stages, authors argue that it's stressful to relocate either way, broadly because it restricts the variety of reactions by everyone that accompanies the process (Scudder 1996: 49-74). The stress comes at relocation, during the transfer, and for the first few years after it. At this point, people adopt a more risk-averse manner. The breakdown of the previous socio-cultural framework, which makes the new patterns and initiatives, after that, it becomes self-sustaining and competent. Most large-scale involuntary resettlement attempts have failed to date. However, the model

was built on Robert Chamber's three-stage framework but was tailored to project success or failure (Chambers, R. 1970: 148; Chambers, R. 2003: 3-14). Thus, the project-oriented model even so, the Scudder-Colson Economic Model includes stress and takes it one step further and conceptualises the essence of displacement and recovery.

2.2.2 Impoverishment Risks and Reconstruction Model

Cernea has developed a theoretical model to account for core areas, social welfare, economic and environmental risks, especially those related to displacement (Cernea 2000: 3659-65). He has outlined eight primary factors in three interrelated and as sources of impoverishment. As an example, landless employment problems may contribute to health problems. Additionally, the risks and how to avoid them are linked. If there is land displacement, one can help provide land to those in need. Coping with the diverse risks can combine to recreate more secure livelihoods.

To resolve the displacement and reestablishment issue, a shift has been made from the 'the stress cantered' model to the affected by development projects. Studies over the years have proven that relocation has only marginalised and impoverished more people. They have been kicked out of their homes or habitats due to habitat destruction. They must resettle in undesirable and untraditional locations. Studies have found that the worst consequences of displacement impoverishment and human rights violations are commonly found in the IRR model. By Cernea, a series of studies (Cernea 1990: 1569-87; Cernea 1995: 320-39; Cernea 1997: 245-64) having land and/property stolen by a reservoir, dam, or road bypassed will only cause short- and long-term problems, but make you poorer in the long-run and break your community ties. Cernea's model suggests that there are eight intrinsic risks involved in

displacement. These risks are landlessness, joblessness, homelessness, marginalisation, food insecurity, increased Morbidity and mortality, loss of access to common property, and social disarticulation. However, these various risks are typically presented in isolation, classified into three categories: economic, socio-cultural, and social-welfare risks (Cernea 2000: 3659-70).

2.2.2.1 Economic Issues

The main concern the loss of economic resources and the reconstitution of access to those resources in such a way as to earn a viable living and reproduce the next generation (Cernea 1996a: 13, Jawando and Samuel 2020: 103-17; Pattnaik 2013: 346-60). Resources like common property and income-producing facilities are included in the budget. Cernea has examined these three different risks. Land can be defined as both lands for housing and production. When the ability to get food from the ground is required, land can be used for ranching or tree production (Cernea, 1996a: 13-20; Stanley 2004: 1-30). It is vital that many people use a common property or an area to support their productivity, for example, forests and wetlands. These could be the main resources that serve the needs of individuals or households. Many people in poverty have access to common resources. Finally, unemployment will be confronted by those who are displaced, and this includes people who lose their jobs because their commute becomes longer or lose their jobs because of consolidation.

However, (Cernea 1996a: 13-22) found the ways to reconstitute these are not straightforward but challenging. There are three facts considered. First is the issue of tenure. While land users have rights, many do not know about the rural areas. Some of those without titles are deemed to have tenure, while others are described as encroachers. While urban growth occurs quickly, many consider places to be

uninhabitable as well. However, a debate on whether long-term squatters ought to be compensated if they are displaced. The tenure of common property can be ambiguous, and governments are reticent to grant it to anyone but individuals.

Secondly, most people are not managed by one power (Cernea 1996a: 13-24). The poor, in particular, are frequently forced to juggle multiple productive resources to make ends meet. As a result, many displaced persons face not just the threat of landlessness, joblessness, or loss of common property, but all three at the same time. Each initiative must make plans for dealing with a dynamic and constantly changing ecosystem.

Third, it's about replacing economic resources, not just resources, for example, a displaced peasant loses not only the yearly income from the displacement, but also the asset that will allow new crops to be grown afterwards. Acquisitions need to be replaced, at cost, not on the market (Cernea 1996a: 26). The loss of productivity is a main cause of impoverishment. That is why the reconstitution of resources is critical to economic development because people have no hope of being well-off without reasonable financial means. However, reconstituting meaningful lives usually require recreating productive resources. According to Cernea, five of the eight risk factors focus on causes of impoverishment.

2.2.2.2 Socio-Cultural Issues

Much larger part of society, more complex economic and social system than we may understand. When weaker social networks and social structures lose their capacity due to people moving away, authority systems break down and fall apart (Downing 1996:34). These causes social disintegration, dispersion, and community division. When more reciprocal networks are broken down, we become more dependent and

less empowered (Cernea 2000: 30). The entanglement of existing social groups can lead to social ineqality.

Marginalisation is a more sensitive topic and results when families or individuals lose financially and work authorisation. Because this may be due to them not using their human capital at a new location, wills are disregarded (Oliver-Smith, 1996: 78; Downing 1996: 36). Marginality can lead to a drop in socioeconomic standing, such as feelings (Cernea 2000: 26). It is also possible for entire ethnic groups to lose their status because national strata engulf them. Communities and networks are two primary and direct ways to decrease disarticulation and marginalisation (Cernea 2000: 3659-78). Teaching people how to use the new resources is important to prevent the group from becoming marginalised.

Even though reconstituting social and cultural resources has always been a key issue, reconstituting groups as communities are more complicated. Power is the possibility of resettlement; it often benefits those who already have it or those who want it. Politically, nationally powerful groups may have the capacity to more control. the conflicts between Mauritian Moors and Tamils downstream of the Manantali dam and an example of violence involving the Mahaweli irrigation project in an African nation that has also been implemented in Canada (Waldram 1993: 175). Often, local groups have fought for and struggled to keep what they have, the inability to maintain control over others to maintain the situation.

It is not just the distribution of power but also the increased awareness that can lead to social change. As those without interests are removed, those with diverse interests take their place. When it comes to rebuilding social units, certain groups will not want to contribute or participate in the project occurred in cases of Indian resettlement, where communities of higher castes broke away from their collective

village counterparts to challenge villages for status and power (Mahapatra 1999: 96). These internal divisions among relocates facilitate any implicit or explicit divide-and-conquer strategies of the powerful and affect the displaced' ability to determine and act in their interest as a group. These class differences enable any divide and conquer methods of the powerful and the underprivileged to work together with Community development strategies that assume a single-mindedness of interests are unlikely to be successful. Instead, social units should be reconstituted with consideration of resettles. A society that loses social and cultural resources causes as well is heavily impacted as well. It is also an important part of human culture to attach to existing notions of time and space. They are messed up in situations like this. The current socio-economic order may not be the main cause of depraved organisation (Downing 1996: 35).

2.2.2.3 Social Welfare Issues

The last three risks identified by the risks and re-buildings could be classified as risks to social protection (Cernea 2000: 3659-65). These include homelessness and shelter shortage, food insecurity if people have not enough to consume and increased morbidity and mortality due to moving stress and changes in the environment. These may be long-term or short-term risks. These are short-term humanitarian, social welfare issues, which can be tackled in line with other projects dealing with natural disasters. They need substantial resources to be mobilised, but for relatively short times. Homelessness can be addressed in many different formats by building plans or the supply of construction material (Cernea 2000: 3659-75). A range of food aid programmes can address food insecurity over the short term. Vaccination and prevention programmes for a disease before displacement and assignment of qualified medical and mental health staff during the resettlement phase may address physical morbidity. Time is essential, but these programmes can follow procedures laid down for other programmes of humanitarian aid. Short-term homelessness, food insecurity, increased morbidity and mortality problems

appear to be among the easiest issues to address. Many resettlement programmes have been relatively well tackled. Because the risks are highly visible and relatively easy in the short run for mitigation, many resettlement project projects stop after addressing these risks for the social welfare sector.

2.3. Harris, Todaro two Sector Model

The foundation for studying the displacement process commonly observed in developed countries is Harris and Todaro 50 years ago (1970: 126-42; Todaro 1969:138-48; Liao et al 2020: 1). But recent advances by Lucas (2004: 29-59), the urbanisation and structural transformation are being addressed in a dynamic framework. While this literature has generated a greater understanding of urban labour and housing issues, demographic transition has been largely overlooked regarding macroeconomics. The Scudder–Colson model concentrated on the various behavioral trends common to each resettlement phase (Panigrahi 2018: 79-81). The first steps of voluntary settlement were explained in the model. They were applied only later to certain involuntary resettlement cases (i.e., those "successful" cases that passed through all four stages). The growing evidence of unintentional relocation schemes that had not taken place in the 1980s and 1990s suggested that it was necessary to introduce a new model to explain the consequences of accidental relocation. It was recognised that a new theory was needed to map what was increasingly regarded in forced resettlement schemes as predictable impoverishment. Due to the existence of positive marginal products in agriculture and high levels of urban unemployment, rural-urban labour migration has not only persisted but appears to be accelerating (Harris and Todaro 1970: 126-42). A two-sector model of rural-urban migration that recognises urban employment opportunities through the use of "shadow prices" implemented through wage subsidies or directs government hiring

will not always improve welfare and may exacerbate the problem of urban unemployment.

Urban development plays a significant role in the development of the economy. Rural-urban migration rates in developing countries exceeded urban employment creation rates and greatly surpassed industrial and urban services' absorption capacity. In two direct ways, migration exacerbates rural-urban structural imbalances. Firstly, internal migration increases the growth rate of urban job-seeking compared to urban population growth disproportionately on the supply side, which has never been achieved since the high proportion of well-trained young people in the migrant system was high (Todaro and Smith 2012: 334-35). It tends to increase the supply of urban labour, while depleting valuable human capital from rural landscape.

Second, on the demand side, it is generally harder and more costly to create urban jobs than to generate rural employment because of the requirement that most industries employ substantially free inputs of resources. In combination with the inability to provide adequate, more labor-intensive production technology, the pressures from the rising urban wages and the mandatory benefits for employees also lead to increased productivity growth in the modern sector (Todaro and Smith 2012: 334-36). Alongside this quick increase in supply and slow growth of demand, a short-term resource imbalance problem tends to be converted into a long-term chronic and rising urban surplus situation. Migration is far more prevalent than urban unemployment and under-employment. The effects of migration are much greater. In most developing countries, the migration phenomenon's importance is not necessarily attributable either itself or even to the sector allocation of human resources. It has implications for the overall economic growth and the character of that growth, especially its distribution.

2.4 John Rawls's "General Conception" of Justice

John Rawls explained his "general conception" of justice in the ethic of development-induced displacement. It requires that all social values - freedom and opportunity, income and wealth and the foundations of self-respect - be equally shared unless an unaffected distribution of all such values benefits everyone (Rawls 1971: 1-25). They raise major ethical issues because the distribution of development advantages and losses is unequal (Cernea 2000: 3659-60). Regarding displacement due to development, Rawls' general conception allows us to recognise as injustices some of the problems faced by not only displaced persons and their families do not benefit from a successful resettlement scheme, but studies show that it can impoverish them. New inequalities can be brought about by depriving people of two other categories of freedom and opportunity and social grounds of respect, not just of their income and wealth. The judgment prohibits inequalities if Rawls' thoughts are followed unless these work in the interests of everyone. Such displacement effects can then be considered not only as inferior but also as unjust. The first contribution of the general concept of justice in the Rawlsian region is to synthesise this different depletion of bad relocation schemes (Rawls 1987: 1-25).

Secondly, to support standards on best practice in treating displaced persons through development projects and strengthening them. This concept of justice is not satisfied by the existing ideas of compensation and mitigation. The justice system of Rawls calls for improved conditions in income and wealth for displaced people (widely designed to include access to land, productive resources and other livelihood resources such as forests, freedom and opportunity (provisioning consultations and auto-determination for the affected communities and individuals) and social bases for

respect for displaced persons (including community social organisation sufficient for cultural survival).

This suggests an alternative set of principles for displacement and resettlement justice: In assets or resources (broadly conceived), the community and its members must not be made worse; the result must instead be advantageous for them. The society shall freely negotiate the displacement and redevelopment of all members. Relocation should not harm the social and cultural self-respect of community members. A community is entitled to refuse moves unless this perpetuates or imposes deeper disadvantages on other communities or other society segments. A more general insight corresponds to the kind of insight central to Rawl's projects that utilitarian thinking is inherently tolerant of social injustice. And this is the starting point for Rawl's theory is social and political justice. A particular concept of injustice is one of the most outstanding results of his analysis, which is significant for unintended displacing. A system that creates benefits for some groups in a community is unfair to others unless it makes benefits for everyone. 'Injustice is just inequalities not beneficial', he wrote in 1971 injustice (Rawls 1971:1-50). Rawls stressed the importance of equality and distributive justice. He favors privacy as one of the people's fundamental freedoms. These concepts are relevant to coerced relocation ideas, especially when we argue for distributive justice, land for land, and assessment in unintentional relocation of pre and post-project circumstances.

2.5 Unbalanced Growth Strategy

The incentive mechanism for breaking down limitations, overcoming conditions, and bursting into the economy's existing external framework by innovation provides unbalanced growth to use the sentence Schumpeter says (Bhatt 1965: 90).

Contemporary mainstream development is an undetermined product of three historical processes: the late neoclassical turning into mainstream economic theory, transformations within the institutional-discursive matrix, policies of growth-centricity to poverty alleviation, and policies of good governance (Akbulut et al 2015: 733-61). Development economics is now an instrument for implementing theoretical development policies.

In the short term, adverse psychological, income, and cultural factors affect individual and family security and displaces worse than non-displaced households. However, in a long time, adaptability among displaces and state mechanisms may help displaces normalise and settle down, especially if adequate compensation policies are sanctioned. An 'unbalanced growth strategy' currently widely used for achieving rapid economic development can trace most of the problems associated with displacement, resettlement and rehabilitation. Unfortunately, the enormous suffering of the poor is not sufficiently reflected in this strategy. Without compensation policies to help them rebuild their lives, development which led to a number of forced expulsions of vulnerable people at large, has only highlighted negative aspects of displacement such as information deficit, failure to prepare a comprehensive rehabilitalisation plan in advance, underestimation of compensation and cash payment. Adverse short-term effects between long-lasting displace (Khatua and Sharma 2019: 25-38). Unfavorable mental, income and cultural factors have a short-term impact on individuals and families' security and tend to make displacements worse than non-displaced families. However, adaptability between displacements and State mechanisms may, in the long term, contribute to the normalisation and resolving of displacements, particularly where adequate compensation policies are approved.

2.6 Chamber's Three-Stage Model

The balance of economic regulations for the third world has shifted from industrialisation to agriculture over the last decade to achieve economic growth (Chambers 1969: 1-10). At the same time, governments have initiated projects to reorganise agriculture and introduce more advanced technology into agriculture-whether under colonial rule or independence. Agricultural schemes have started in British colonies before independence. They have included, since independence, various approaches in formerly British countries: land consolidation, agricultural planning, crop rotation and credit schemes, marketing cooperatives, introduction of cash crops, mechanisation and state farming.

Some of the most notable of these projects were the settlement or relocation schemes (Chambers 1969: 20-35). Settlement schemes and relocation schemes have been and continue to be common and prominent in Africa (in particular in West, Central and Eastern Africa, including Sudan). There were extensive resources for these projects. They naturally include land, labour, technology and administrative matters, but the magnitude of capital investment is most easily indicated. West Nigeria has had multiple problems with school leavers settlements indeed, sociologists, agriculturalists and economists in almost all countries have been criticised for failing to meet their social, agricultural and economic objectives and absorb scarce, possibly improved resources. Because of the past and the broad future proposals common failures, we need to try to draw attention to the experience and study the nature of the settlement plans so that what is decided can be weighed more realistically by any alternative policy.

Chamber identified a three-stage general model for the evolvement of land settlement systems in Africa namely recruitment, transition and development (Nelson 2013: 323). An analysis of economic, social and institutional aspects which have contributed to success or failure both Chamber and Nelson models have generalised volunteers' experiences and designed institutional and organisational dimensions of managed land settlement schemes. The discretion of policy actors remains to give a country's economy net gains or losses (Henisz 2000: 1-31).

2.7 Conclusion

This chapter has discussed theoretical and methodological aspects of economic impact of migration and displacement on the displaced people. Chapter highlights the livelihood security and welfare aspects of the displaced population by linking classical development theories to modern environmental methods to adjust and secure their livelihoods in the new environment.

Chapter 3

Extent and Dimension of Displacement in Indian Context

3.0 Introduction

During the past two decades, the magnitude of less voluntary and more forced population displacements caused by development programs was approximately 200 million peoples globally (Cernea 2000: 3659). Further, development-caused evictions also become a significant problem for global population. Therefore, the livelihood security of the suffering people for an involuntary displacement and resettlement should be treated as an integral part of project design from the earliest stages of project preparation (OECD 1992: 6). Production systems are dismantled, productive assets and income sources are lost, and people are relocated to environments where their social and affective skills may be less applicable and the competition for resources more significant (Stanley 2004:5-6). Displacement may also have longer-term negative developmental impacts affecting human and social capital, economic growth, poverty reduction efforts, and environmental sustainability (Christensen and Harild 2009: 4).

An impact could lead to direct and indirect displacement. For instance, highways, roads and residential building construction lead the pollution and health issues. Authorities restore and protect the environment from safeguarding natural resources for future generations (Slootweg et al 2001: 19-20; McCully's 1996: 1-50; WCD 2000: 1-400). Provide an in-depth look at the impacts of large dam projects. The outcome reveals that dams are trapping sediment and causing erosion and soil degradation downstream. Coal-related projects could be responsible for the use of energy. India's most valuable and abundant fuel is coal, which serves as the country's primary source of energy for industry (Mishra 2010: 49-68). In one hand, these problems facing by the displaced and non-displaced community at a broader level and

on the other hand, displaced people suffering many livelihoods problems such as landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity, loss of access to common property resources and community disarticulation (Cernea 2000: 3662).

Based on the above issues, this chapter consists of four sections. Section 1 examines the extent and dimension of displacement and contribution of various eminent institutions and monitoring or evaluation systems in India. Section 2 is connected to state and sector-wise project details, while Section 3 is based on displacement and land acquisition using NSSO data, while land use pattern changes are examined in the last section.

3.1 Extent and Dimensions of Displacement

Displacement has been viewed as a process that begins with the project's announcement and lasts long after the people have lost their land and livelihood (Srinivas and Nayak 2018: 444-45). Such a definition encompasses the narrow concept of physical eviction from farmer's habitat and a natural rehabilitation process. The danger increases if displaced persons are not resettled as soon as possible after their displacement. The amount of land taken from people for the project is not always proportional to the amount of land needed. The township and other staff facilities will occupy the majority of the land (Chakravorty 2016: 48-62; Wubneh 2018: 170-83).

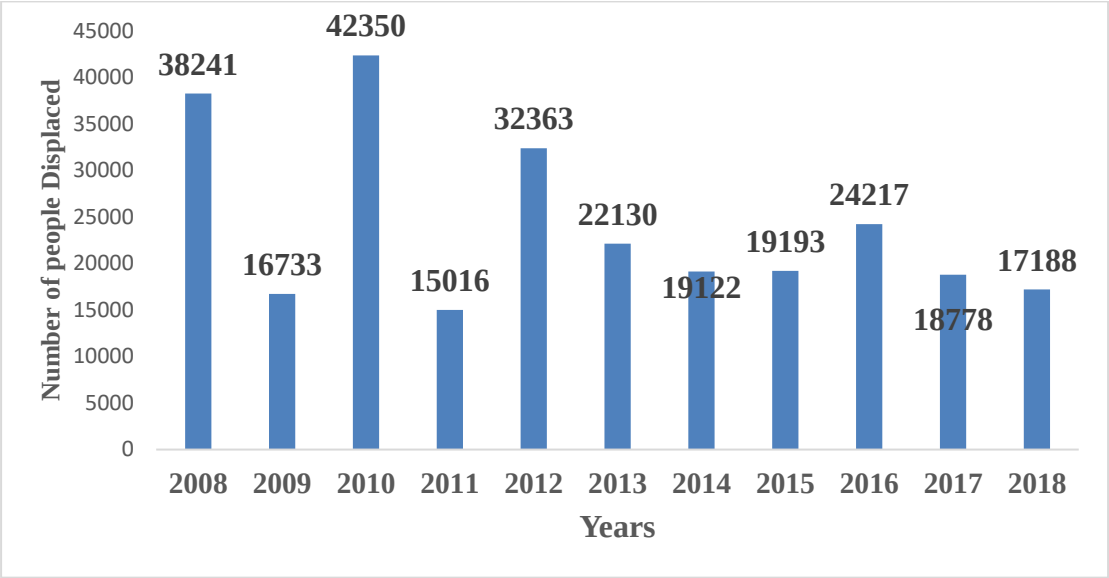
Population displacement (whether caused by development, conflict, or environmental disasters) ruins people lives physically, economically, socially, and culturally. The instability of a community social structure can lead to generational poverty for those displaced (Maldonado 2012: 193-94). They frequently face challenges common to all

poor and displaces can be further disadvantaged by the trauma of displacement and many issues related to the displacement loss of social capital, lack of adequate documentation, and limited support networks (Crisp et al 2012: S24-S25). Displacement in cities, restrictions on the right to work and enter markets, and, in many cases, hostility from settled residents. Most of the estimated 250–300 million people who have been displaced by public and private-sector development projects over the past two decades have experienced livelihood insecurity issues including joblessness, food insecurity (Cernea 2008: 89-95).There is a growing awareness that governments have tended to focus on project implementation, while less attention has been paid to operation, maintenance, and sustainability issues. While many countries have developed quite elaborate systems for monitoring project implementation, very few countries produce even the most rudimentary information on project operation and maintenance or the extent to which projects make their intended benefits.

3.1.1 Natural Disaster and Displacement

Natural disasters in recent years have caused a tremendous amount of internal displacement worldwide. Estimates of Internal Displacement Monitoring Centre on natural disasters expelled that about 42 million people from their homes in 2010, 14,9 million people in 2011, and 32,4 million people in 2012 (IDMC 2018:1-3; Weiss and Korn 2006: 1-2; Gemenne and Brucker 2015: 245-65). Further, recent disasters have shown that even highly developed countries are not free from the danger of forced migrations caused by sudden natural hazards (Blacke at al 2013: S32-S43). Figure 3.1 shows displacement by the climatic events. Results from the Figure 3.1 reveal that displacement and natural disasters have positive relationship. As the frequency of natural disasters increases, the intensity of displacement also increases over the years.

Figure 3.1: Natural Disasters and Displacement ('000')



Source: United Nations High Commissioner for Refugees, 2019

3.1.2 Monitoring and Evaluation of Projects in India

The rapid expansion of international development assistance in the 1970s created a demand for systems of control and accountability on the part of government and private agencies (Ahmed 1988: 3). Most South Asian countries have developed new or strengthened existing systems for centralised monitoring and evaluation (M&E) development projects over the last five to ten years. The systems are designed to provide policymakers, planners, and managers with timely feedback on performance of development projects and potential problems. After careful evaluation of the performance of project, following issues are indentified. First, projects are intended to produce various benefits, some of which are easily quantifiable (industrial output, volume of water, number of houses built). Second, qualitative evaluation is quite difficult (Bamberger and Cheema 1990: 8-9). When a project has multiple outputs, using a single number or indicator to assess sustainability is misleading. Some benefits may have been delivered successfully, while others may have been missed. An irrigation project, for example, may result in a significant increase in the volume

of water, which may lead to sustained increases in the production of specific cash crops. However, the same project might not have resulted in the desired health improvements. Necessitate assessing the staffs' quality and stability, the adequacy and stability of financial resources for recurring expenditures, coordination with other government agencies, and connections to local community organizations and beneficiaries.

3.1.2.1 Environmental Impact Assessment

Environmental impact assessment (EIA) is directly related to establishing development projects and the pre-displacement process. Since the initial impoundment of development projects, EIA has evaluated emerging significant environmental outcomes (Xu et al 2013: 1). Any development project must include an assessment of the environmental impact. The EIA identifies and evaluates any potential environmental effects and, when appropriate, proposes mitigation measures (Canter 1996: 1-8).

The need for waste management that is safe, responsible, and sustainable is critical to eliminate health risks and adverse environmental effects. It describes the policy, legal, and administrative frameworks, the proposed project, and the existing environmental conditions, identifies potential environmental impacts, offers alternatives, and recommends an environmental management plan that includes mitigation, monitoring, institutional, and capacity building strategies. The process of assessing the environmental impact (EIA) is mandatory for developments activities (Fox et al 2006: 129).

The broad range of activities, including highways and other modes of public transportation, natural resource leasing and extraction, industrial farming and policies are governing genetically modified crops, and large-scale urban redevelopment

projects (Bhatia and Wernham 2008: 990-91), encompassing smaller-scale development projects as well as state-led natural resource management and public infrastructure development programmes. Not only do EIA-regulated projects, policies, and programmes have an impact on environmental quality, but also on industry and employment patterns, regional economies, the built environment, social organization, and culture-all of which are significant determinants of health and well-being. When considered collectively, the range of activities subject to state or federal EIA profoundly affects community health. The EIA presents a unique opportunity to demonstrate how the development process can benefit the environment (Dougherty and Hall 1995: 1-2). Additionally, the EIA forecasts potential conflicts and constraints between the proposed projects. EIA is a management tool that complements other instruments used by planners and decision makers. Any EIA should have as its objective the promotion of sustainable development (Wathern 2013: 1-15). The developed world has not been the only country to recognise the potential of EIA. Numerous developing countries have quickly recognised that the procedures enable introducing certain aspects of environmental planning, frequently in the absence of any formal land-use planning control system.

The EIA provides a unique opportunity to demonstrate ways in which the environment may be improved as part of the development process (Dougherty and Hall 1995: 1-22). The EIA also predicts the conflicts and constraints between the proposed projects. EIA is a management tool for planners and decision-makers and complements. The aim of any EIA should be to facilitate sustainable development (Wathern 2013: 1-15). Countries in the developed world have not been alone in realising the potential of EIA. Many less developed countries have been quick to appreciate that the procedures offer a means of introducing some aspects of

environmental planning, often in the absence of any formal land-use planning control system. Before issuing the final analysis for each project, the EIA demonstrates that environmental pollution has been addressed. It predicts the environmental impacts in their early stages and identifies and determines methods for mitigating negative (Nahvi et al 2018: 186). It is an essential tool for mitigating the adverse effects of development projects.

Table 3.1 shows that the respected states conduct EIA. This table recorded EIA between the years 2014 to 2019. In the case of Uttar Pradesh in 2014, there are 5 EIA conducted although which is increased by 31 in 2019. Environmental impact assessment (EIA) is critical because a projects success depends on its type, nature, and process (Hasan et al 2009: 133-39). EIA undertaken by different states over the years. Because in the land acquisition law, EIA mandatory before implementing any projects and monitoring and assessing the effects of a project (Marshall et al. 2005: 176).

Table 3.1: State-wise number of EIAs

States/Uts	2014	2015	2016	2017	2018	2019
Andhra Pradesh	14	52	52	85	21	28
Arunachal Pradesh	3	7	1	4		1
Assam	3	8	6	10	7	13
Bihar	0	13	7	16	16	13
Chandigarh	0	0	0	1	0	1
Chhattisgarh	7	18	24	25	22	20
Delhi	15	17	2	22	51	64
Gujarat	58	146	90	143	108	108
Haryana	13	164	7	46	76	34
Himachal Pradesh	21	18	10	20	22	8
Jharkhand	9	16	30	23	11	20
Karnataka	21	24	40	90	25	25
Kerala	20	14	12	47	32	9
Madhya Pradesh	6	25	18	17	20	32
Maharashtra	120	130	185	340	82	87
Odisha	15	28	17	41	40	28
Punjab	5	24	7	21	14	14

Rajasthan	43	97	58	33	44	42
Tamil Nadu	12	76	46	39	55	16
Telangana	24	24	24	10	18	60
Uttar Pradesh	5	21	16	165	28	31
Uttarakhand	12	20	42	20	33	8
West Bengal	14	29	22	20	21	23
India	444	1023	7360	1279	773	699

Source: Ministry of Social Justice, Government of India, 2019.

3.1.2.2 Social Impact Assessment

Social Impact Assessment (SIA) has conduct social and environmental related research to inform SIA practice. Social Impact Assessment refers to the processes of analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, and projects), as well as any social change processes triggered by those interventions (Vanclay 2003:7). Its overarching goal is to create a more sustainable and equitable biophysical and human environment.

A social impact assessment method seeks community members' judgments of social impacts resulting from project alternatives (Becker et al 2003: 367-68). The technique employs a participant-driven description of the social system as well as a set of community constructs. Participants from various areas of community involvement are exposed to a structured small group process in which information is shared and community-level impacts are discussed. Its overarching goal is to create a more sustainable and equitable biophysical and human environment (Slootweg et al 2001: 19). All effects necessitate a thorough understanding of all the biophysical and social changes induced by a planned intervention. Biophysical impacts have social consequences, and social changes can cause changes in the biophysical environment, resulting in biophysical impacts. The process of developing international guidelines and principles, on the other hand, has been complicated. As developing international

policies and regulations progressed, increasing pressure was applied to the conventional understanding of SIA.

Method of social impact assessment seeks community members' judgments of social impacts resulting from project alternatives in an environmental impact assessment (Becker et al. 2003: 367-68; Barker and Wood 1999: 387-404). The method employs a participant-driven description of the social system and a set of community constructs to guide the identification of anticipated social impacts. A diversity of participants with different areas of community involvement is exposed to a structured small group process where information is shared and community-level impacts are deliberated. Based on group discussion, participants project social impacts and identify measures necessary for their mitigation.

In the course of evaluating its meaning, it has taken on a definitive, if economic, connotation in current usage of the word: improvement of society's economic status and battlement of quality of life (B.K. and Nayak 2016: 10-11). Rapid urbanisation and sprawl, deforestation, soil erosion, agro-chemical pollution, water shortages, abandonment of rural areas, declining health and physical resilience, unsustainable agricultural and production systems, difficulties in building effective governance systems, and the effects of migrants on source and destination communities are among the challenges associated with migration and the environment (House 2007: 1-3). The social impact assessment considers the consequences of a current or future action, such as when an action is taken to mitigate or eliminate a problem (Becker 2001: 3-13).

Three types of social impact assessment can be identified: micro, meso and macro[2]. The types are built around their distinguishing characteristics (Becker 2001: 315-316). These three types can be found in various settings, sometimes solely focused on social impacts and other times integrated with different kinds of impact assessment. Other times, they can be combined with other forms of impact assessment. They can be project-based or applied to strategic impact assessment policies (Vanclay 1999: 1-3; Vanclay 2006: 3-14).

3.2 Projects Distribution and Allocation of Cost across India

Infrastructure development through PPP will not achieve the goals of sustainable development (Patil and Laishram 2016: 161).Following monitoring and evaluation, it is necessary to determine how many projects have entered, ongoing and completed in the economy. The number of projects has increased, but EIA and SIA have not increased as development projects significantly. Then, create a problem between projects and EIAs. Since the late 1990s, the expansion of PPP projects across infra sub-sectors and geographical regions have changed India's public provisioning of infra services (Nagesha 2018: 203-20).

The few infrastructure projects, primarily transportation, are limited to national highways (NHs), airports, and urban infra projects developed through PPP model (Kumar and Gupta 2016: 9-20). In contrast, health and education and rural infra projects remain unappealing despite their vast inadequacy. The study also highlights the positive impact of competition on the project cost of PPPs in terms of reducing government financial burden. A mechanism for optimizing the performance of public duties, achieving the best cost-effective ratio, overcoming

[2]Type 1, micro-social impact assessment, focuses on individuals and their behaviour. Type 2, meso-social impact assessment, focuses on organizations and social networks (including communities), while Type 3, macro-social impact assessment, focuses on national and international social systems(Becker 2001: 315-316).

limited budgets, and compensating for lack of economic strategies and ideas in the public sector (Kumar and Gupta 2016: 20-26).

3.2.1 Status Wise Performance of Projects and Cost

A well-known management system that integrates cost, schedule, and technical performance is value project management. It allows for calculating cost and schedule variances and performance indices and project cost and schedule duration forecasts (Vandevoorde and Vanhoucke 2006: 289-302). The earned value method provides early indicators of project performance, highlighting the need for future corrective action. On the other hand, project monitoring and control observe during the construction phase, infrastructure projects frequently face scheduling issues and cost overruns. As a result, modern technology must improve monitoring capability, scheduling accuracy, and cost estimates in construction engineering (Chou et al 2010: 596). Information technology eliminates the need for project managers to perform the tedious tasks of documenting, analyzing, and presenting project information. Construction companies can improve their business operations and profits by closely monitoring key project performance indicators to detect and correct cost and schedule overruns as soon as they occur. While contractors can create their automated systems to track project progress, developing such systems incurs additional costs and routine operations.

Table 3.2 depicts the number of projects and respective costs. There are five categories of projects i.e., Pre-construction stage, not available, Completed, Operation and maintenance stage and under construction. Among all types, the highest number of projects in the under-construction stage and completed projects are 4411 and 3075.

Table 3.2: Status wise Number of Project and Cost (In Crore)

Status	Number of Projects	Total Project Cost (Crore)
Pre-Construction Stage	527	5,07,830

Not Available	79	30,446
Completed	3075	19,54,170
Operation and Maintenance Stage	1150	18,90,303
Under Construction	4411	24,30,258
Total	9242	68,13,008

Source: Infrastructure Division Department of Economic Affairs Ministry of Finance, Government of India, 2019.

3.2.2 State-wise Performance of Projects and Cost

The public-private partnership (PPP) innovation model for infrastructure and public service delivery has been widely adopted worldwide (Cheng et al 2020: 1-3). The knowledge spillover effect and the policy diffusion mechanism have been critical in promoting PPP development in globalization. A comparative evaluation of PPP policy and management in various countries will aid in understanding the development of PPP, provide a decision-making reference for PPP policy embedded with specific national conditions of each country and contribute to the global PPP knowledge body. It is critical for the success of PPP projects that proper planning is made from the conceptualization stage so that all issues are addressed for smooth implementation. As a result, it is critical to have a proper understanding of the core issues of PPP Project implementation and the barriers to successful development, Innovation model for infrastructure and public service delivery, public-private partnership (PPP), has been widely adopted worldwide.

3.2.3 Sector-wise Projects Distribution and Cost

The development of PPPs in the water sector is increasing (Wu et al 2016: 153-76). A comparison of PPPs in water and sanitation in the two countries reveals the importance of water tariff reform, strong national government support and oversight, and the availability of credible regulatory mechanisms to ensure the development and sustainability of PPPs. Roads, ports, airports, power, water, railways, urban facilities, and even telecommunications dominate India's current landscape of infrastructure

development (Chahar and Gangal 2017: 27-29). India's current spectrum of development paradox is likely to achieve sustainable double-digit Gross Domestic Product (GDP) growth in the future. Substantial investment in infrastructure has been shown to increase job creation, lower business costs, increase production efficiency, and improve quality of life. One side project increases the GDP, but it increases the land acquisition and displacement on another side.

3.2.4 Land Acquisition by the Development Projects

India faces significant challenges in generating economic growth while remaining socially inclusive, environmentally unsustainable, politically feasible, and in accordance with the rule of law (Wahi 2017: 1). The state's equitable and efficient acquisition of land for economic development projects such as infrastructure and industry are at the heart of these challenges. Land is not only a valuable economic resource and source of livelihood; it is also central to community identity, history, and culture. The size and speculative nature of land transactions in the aftermath of the energy, food, and climate crises have surprised observers; however, the reasons for the partial implementation of many land developments have gone largely unexplored.

Table 3.3 shows the land acquisition for the National Highways Authority of India (NHAI) during 2017 to 2020. It is observed that the land is relatively less acquired from the notified land. In 2017, 8471 hectares of land is notified for the acquisition, while only 7491 hectares of land is acquired by NHAI. Similar results are also reported for the study period.

Table 3.3: Land notification and Acquisition

Year	Notified	Total Area Acquired
2016-2017	8471	7491
2017-2018	11459	9494
2018-2019	96450	29374
2019-2020	12784	7774

Source: Ministry of road transport & Highways, Govt. of India, 2020. Note: figures are in hectares.

3.3 Displacement Status in India

Migration has important economic implications for labor markets in the developing-country (Rao and Finnoff 2015: 485-505). Despite increasing research on the link between migration and development; the scope and scale of the phenomenon as well as its relation with development is not yet fully understood.

Table 3.4 shows the displacement condition due to development projects, land acquisition, natural disaster and many other variables, which are directly responsible for displacement. There is a biggest constraint in the field of development induced displacement. The results from the Table 3.6 reveals that out of the total displacement factors, 0.77 percent of displacement occurs due to development projects during 1988-89. Further, 0.09 percent of displaced population is being faced housing problem in the period of 1992-93. The higher intensity of housing and is being observed in the 1999-2000. About 1.12 percent of displaced population is facing housing problem

Table 3.4: Displacement Status by the Various National Sample Survey Migration Rounds

44th Round (1988-89)	
Round Reason for Leaving the Last Usual Place of Residence	**Percent**
In search of food resources	2.94
In search of Employment	7.56
Due to Natural Calamity	0.53
Displacement caused by Development Projects	**0.77**
On Marriage	61.53
Due to Migration or Parent/Earning member	16.59

Other Reasons	10.08
Total	100
49th Round (1992-93)	
Reason of Movement	**Percent**
In search of Employment	0.43
In search of Better Employment	0.62
To take up Employment better Employment	0.44
Transfer of service/contract	0.58
Proximity to place of work	0.07
Studies	0.44
Acquisition of own House flat	**0.06**
Housing problems	**0.09**
Social political problem	0.09
Health	0.01
Others	0.16
Invalid	0.01
Total	100
55th Round (1999-2000)	
Reason for Migration	**Percent**
NA	0.38
In search of Employment	3.63
In search of better Employment	3.68
To take up Employment better Employment	2.51
Transfer of service/contract	2.93
Proximity to place of work	0.34
Studies	1.83
Acquisition of own house flat	**1.49**
Housing problem	**1.12**

Social political problem	1.01
Health	0.21
Marriage	58.84
Migration of parent earning member of the family	17.88
Others	4.15
Total	100
64th Round (2007-08)	
Reason for Migration	**Percent**
In search of Employment	18.9
In search of better Employment	20.35
Business	5.48
To take up Employment better Employment	20.48
Transfer of service/contract	14.13
Proximity to place of work	1.93
Studies	8.61
Natural disaster (drought flood tsunami, etc.)	0.53
Social political problem (riots terrorism, political refugee, bad law and order, etc.)	0.55
Displacement by development projects	**0.32**
Acquisition of own House flat	**1.8**
Housing problems	**1.73**
Heath care	0.46
Post retirement	0.44
Marriage	1.59
Others	2.72
Total	100

Source: Various NSSO rounds.

3.3.1 Urbanization in India

India is the world most populous country, but it is also one of the least urbanised. In India, 31 percent of the country's population lived in urban areas (Census 2011). Between 2001 and 2011, the urban population has increased by 2.76 percent per year. Further, the overall urbanisation has increased from 27.7 percent to 31.1 percent during the same period of time. It reflects the faster economic growth in the 2000s, which resulted in faster urbanisation.

Table 3.5 depicts that the urbanization trends in India During the 1960-70s, nearly 19 per cent of the population was living in urban areas, while the rate of urbanization increased by 32.72 percent during 2011-19. It also states that agricultural land has now converted into housing, roads, and industrial purposes.

Table 3.5: Trends of Urbanization in India (in Percentage)

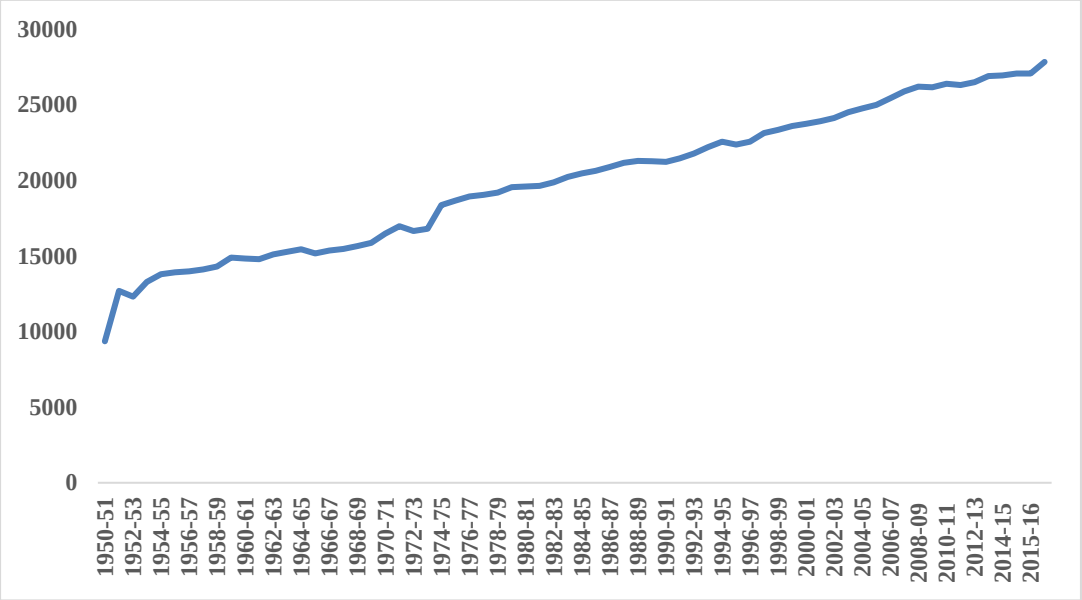
Period	Urbanization Population	Rural Population	Total
1960-70	18.80	81.20	100.00
1971-80	21.52	78.48	100.00
1981-90	24.47	75.53	100.00
1991-00	26.72	73.28	100.00
2001-10	29.41	70.59	100.00
2011-19	32.72	67.28	100.00

Source: World Bank, 2019.

3.3.2 Land Use Classification in India

The most critical factor is infrastructure expansion; road, urbanisation and industrial development for economic growth, raising population positively affect the land use pattern (Sharma 2015: 1-2; Abdullah and Hezri 2008: 2; Ahmed et al 2016: 1-3; Rozenstein and Karnieli 2011: 533; Ho and Lin 2004: 758-60; Quasem 2011: 59-60; Gardne 1977: 1028-30; Alig and Healy 1987: 2015-26). Figure 3.2 shows the data from 1950 to 2016 area under non-agriculture uses.

Figure: 3.2: Area under Non- Agricultural Uses in India ('000' Hectare)



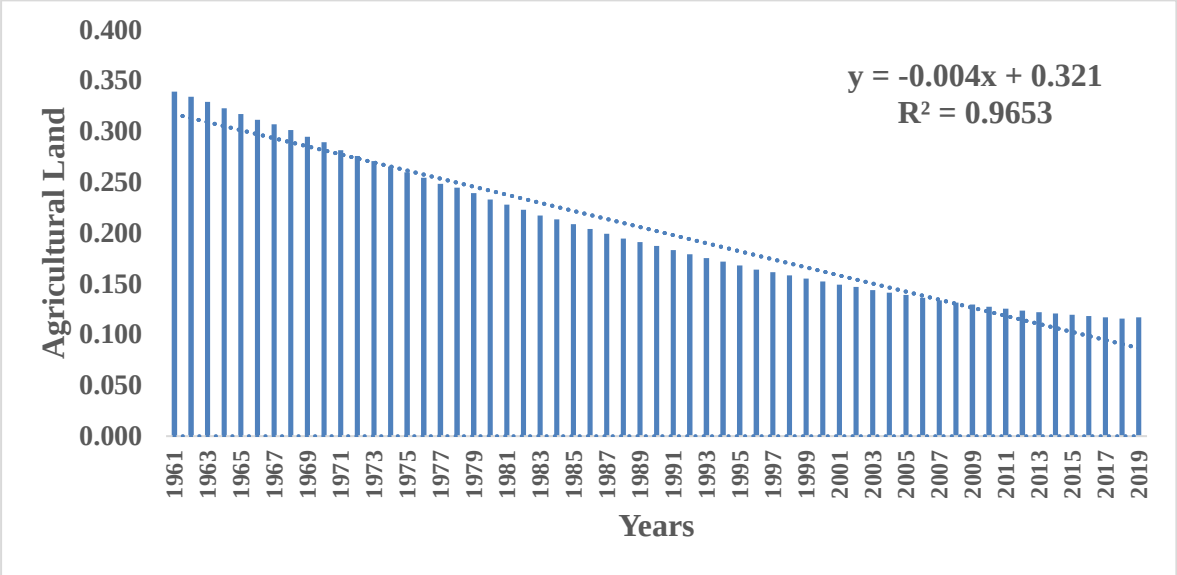
Source: Ministry of Agriculture & Farmers Welfare, Govt. of India, 2016.

3.3.3 Per Capita availability of Agricultural Land

Agricultural land is typically converted to non-agriculture as demand for non-farm products and services increases, particularly as the country and per capita incomes rise (Quasem 2011: 59-85). A surge in rural residential construction and significant growth in rural industry, highways, airports, and power plants would appear to imply a significant increase in the amount of built-up land that is not classified as urban (Alig 1987: 2015-26). The most critical factors influencing agricultural land were urbanisation, road infrastructure expansion, and industrial development. As a result, proper land resource planning & management, and an appropriate policy framework are required to prevent agricultural land conversion (Sharma 2015: 1-2). Managing the urbanisation process and industrial and infrastructure expansion to protect productive agricultural land while utilising barren and uncultivable wastelands (about 17.2 million ha) is critical to the country's prosperity and sustainability. As a result, restrictions on the conversion of agricultural land to non-agricultural uses (primarily industrial estates) are required.

Figure 3.3 clearly show that the share of per capita availability of agricultural land has dramatically declined. There can be many reasons for declines of land share such as fragmentation of land, losses of land, urbanization, land use pattern change in favour of commercialization and infrastructure projects.

Figure 3.3: Per Capita Availability of Agricultural Land (1961-2019)



Source World Bank, 2019.

3.4. Land Use Pattern Change in India

The changes in scenario are most noticeable for agricultural land uses, with significant area declines resulting from assumptions about future crop yield development to changes in agricultural commodity demand (Rounsevell et al 2006 57-68; Singh and Sanatan 2018: 923-32). These assumptions are resulted in abandoned agricultural land (Singh 2018: 9-24; Singh 2020d: 17-34).

Table 3.6 depicts the land use pattern change. Area not available for cultivation has declined from 14.73 percent to 13.29 percent over 1951-2019, while forest area has increased from 15.28 percent to 21.80 percent during the same period. As far as arable land is concern, it marginally increased. In contrast, the area under barren and non-arable land has sharply declined from 14.66 to 9.55 percent during the same period.

Table 3.6: Land Use Pattern Change in India

Period	Total Geo-graphical Area	Average area (in '000' ha)				Percentage to total geographical area			
		Area not available for cultivation	Forest Area	Arable Land	Barren	Area not available for cultivation	Forest Area	Arable Land	Barren land
1951-60	328726	48428	50237	181874	48187	14.73	15.28	55.33	14.66
1961-70	328726	48977	60773	180201	38775	14.90	18.49	54.82	11.80
1971-80	328726	41461	66060	184061	37144	12.61	20.10	55.99	11.30
1981-90	328726	40573	67037	185103	36013	12.34	20.39	56.31	10.96
1991-00	328726	40877	68597	184358	34894	12.44	20.87	56.08	10.61
2001-10	328726	42276	70683	182877	32889	12.86	21.50	55.63	10.01
2011-19	328726	43684	71677	181957	31408	13.29	21.80	55.35	9.55

Source: Ministry of Agriculture & Farmers Welfare, Govt. of India, 2019.

3.4.1 Land Use Pattern in Lucknow

As far as land use pattern change in Lucknow is concern, arable land has sharply declined from 63.93 percent to 54.99 percent during 1966-70 to 2011-19, while area not available for cultivation has increased from 24.61 percent to 37.06 percent (Table 3.7). Barren land has declined from 7.06 percent to 2.83 percent, while are under forest has marginally increased from 4.40 percent to 5.12 percent.

Table 3.7: Land Use Pattern Change in Lucknow (in Percent)

Period	Arable Land	Area not available for cultivation	Barren Land	Forest Area
1966-70	63.93	24.61	7.06	4.40
1971-80	63.20	27.15	6.03	3.62
1981-90	61.62	29.67	4.26	4.45
1991-00	56.71	34.39	3.99	4.91
2001-10	55.64	35.31	3.35	5.71
2011-19*	54.99	37.06	2.83	5.12

Source: ICRISAT-VDSA, 2019. Note: Data during 2011-19 was extrapolated.

3.5 Conclusion

The present chapter examines the extent and dimensions of project leading displacement in India. Secondary data collected from different sources are analysis to sketch the displacement picture of Indian and its consequences on the livelihoods of affected population. Results from this chapter indicate that the intensity of

displacement has dramatically increased use economic development increased. Further, demands of land for urbanization were meet to change in land use pattern. Fertile agricultural land surrounded to the growing cities has converted into the commercial land for infrastructure projects, housing and roads. Land use pattern data reported rapid urbanization in the Indian in general and Lucknow in particular.

Chapter 4

Socio-Economics Profile of Study Area

4.0 Introduction

Development projects are a vital indicator of economic growth (Brand 2001: 961-976; Chu1 997: 294). Radical change and economic growth have occurred due to the development projects, infrastructural change and many more factors (Ho and Lin 2004: 758-72; Lin and Ho 2005: 416).The potential of developmental projects fostering growth depends on well-suited infrastructure (Turok and Mc Grahahan 2013: 465-82). In order to construct large-scale projects, requirement of land is prerequsite (Andersonand Brusberg 2002: 4-5; Vanclay 2017: 3). Hence, policymakers' changes land use pattern from agriculture to non-agricultural over the years. This leads to displacement of farmers in general and agricultural labour in general. Further, where people are moved other places and not needed to move physically (De 2001: 4637; Agrawal and Redford 2009: 2). Land acquisition cases, the project can still impact their livelihoods or income-generating activities, either temporarily or permanently (i.e. economic consequences of displacement); this imposes a threat to the livelihoods in general and local environment in particular (Mutton and Haque 2004: 41-62).The socio-economic backwardness leads to poverty and marginalisation. Socio-economic units before and after displacement and land acquisition related to indicators such as caste, family, religion, education, income, and occupation (Abbink 2011: 513-35).

Large-scale land transfers for the development purpose affect social, economic and environmental status (German et al. 2011: 1-10). People are partially involved in land allocation processes, which take into account both the procedural issues of consultation and consent and compensation issues (Vermeulen and Cotula 2010: 899). The decision to "take" property is best viewed in terms of cost-effective land use

regulation and law (Blumeand Rubinfeld 1984: 571; Michelman 1966: 1165). It may be borne solely by the landowners harmed by the regulatory action.

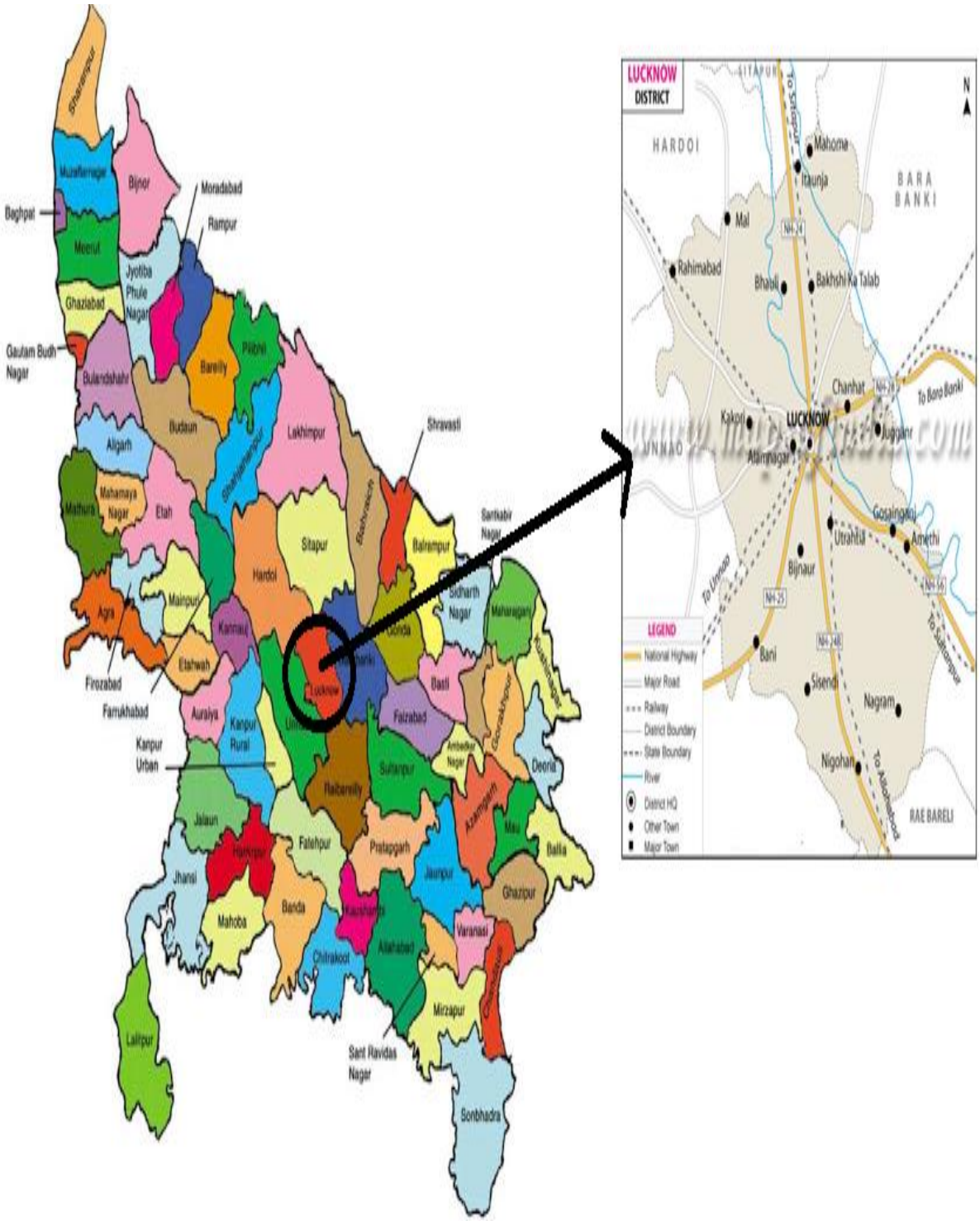
This chapter covers the objective to examine the socio-economic situation in the survey area (Lucknow). This chapter consists of three sections; Section 1is based on geographical, demographic and socio-economic indicators of sample households, while Section 2 examines the change in accessibility of basic amenities after displacement. Finally, Section 3examines the status of compensation of land and payment transfer issues.

4.1 Geographical Profile of Study Area

The present study was conducted in the most urbanised and capital of most populous state of India i.e., Uttar Pradesh state. Uttar Pradesh has been selected through development of a project basis. Uttar Pradesh consists of 75 districts. Further, out of 75 districts, Lucknow district was purposively selected for the field survey.

The geographical location of Lucknow is between 26.50^0 North and 80.50^0 East (Census of India, 2011: 7). It is located at an elevation of 123 meters above sea level. The geographical area of Lucknow is 2, 528 square kilometres. Climate of Lucknow is sub-tropical; having three main climate seasons, namely summer, rainy and winter. It has 13,082 hectares of forest cover with 13, 6,459 hectares of agricultural land. Wheat rice, mango, barley and maize are main crops.

Figure 4.1 Map of Study Area



Source: Maps of India.com 2011

4.2 Socio-Economic Profile of Sample Households

In this section, an effort is made to present socio, economic and demographic data of 250 household and family members. As a result, the four displacements and land acquisition villages Matti, New Garura, Ghuswalkalan, and Yusuf Nagar were selected. This chapter includes many aspects such as caste, religion, age, education, income, expenditure, household assets, livestock, and other social-economic indicators. Moreover, land compensation and related issues to the sample households of surveyed villages have been focused.

Caste is a complex social structure that has witnessed several shifts over time. Untouchability has been abolished constitutionally, but socio-economic differentials persist. When it comes to preference, those who belong to SC/ST communities are prone to experiencing direct or indirect discrimination. The caste system is utilised in numerous ways, such as developing a social relation and political relation (Bidner and Eswaran 2015: 2).

Table 4.1 depicts the socioeconomic profile of the sample villages. It is reported from Table 4.1 that more than 60 percent of the population belongs to the Other Backward Class (OBC) social group, while 28 percent of the population belongs to the Scheduled Caste (SC) and 10.47 percent of the population belongs to the General caste. Further, population belongs to the OBC category is highest in Matti village (83.33 percent), while lowest in Ghuswalkalan village (41.94 percent). Furthermore, the population belongs to the SC category is highest in Ghuswalkalan village (45.16 percent), while lowest in Matti village (16.67 percent). Population belongs to the General the category is highest in New Garura village (21.05 percent), while lowest in Matti village (zero percent).

Table 4.1 also reveals that the majority of the population belongs to the Hindu religion (i.e., 91.58 percent). Sample villages are male dominant societies. It is observed that 89.17 percent of respondents are male, while 10.83 percent are female. Further, village-level analysis shows that male respondents belong to the Matti village are highest (93.33 percent), while the lowest belongs to the Yusuf Nagar village (85.71 percent). On the contrary, female-headed households are highest in Yusuf Nagar (14.29 percent), while lowest in Matti village (6.67 percent).

The importance of family characteristics is the formation of families (Axinn et al. 1994: 65).A general trend of larger families but predominately nuclear families were seen. So family size matters in the area of development-induced displacement. It is reported from Table 4.1 that more than 80 percent of households are living with the nuclear family systems. Village level analysis reveals that respondents belong to the Yusuf Nagar (90.48 percent) are highest living with nuclear family system, while lowest n Ghuswalkalan (75.81 percent) on the other hand, respondents belong to the Yusuf Nagar is the lowest living with a joint family system (9.52 percent), while highest in Ghuswalkalan (24.19 percent).

Education is the important determinant that reveals the status of any society, culture, and economy (Westhoff et al 2008: 95). Education is the basic or key factor for the good quality of life and society also **(**NSSO 75: 12**).** It is reported from Table 4.1 that 55.90 percent of the sample households are illiterate, while 44.86 percent are literate at the village label. Village level analysis reveals that respondents who belong to the Matti village are the highest illiterate (66.67 percent), while respondents who belong to the New Garurra village have the lowest illiteracy (50.53 percent).

Occupational distribution represents economy's growth (Markey and Parks 1989: 3). Table 4.1 also reveals that 58.4 percent of sample households are unemployed, while 41.6 percent of households are employed such as daily wage workers, government employees and etc. Further, village-level analysis shows that respondents belong to the Matti village are highest unemployed (73.33 percent), while the lowest unemployed in Yusuf Nagar (42.86 percent).

House is a basic need for survival (Mall 2019: 229). The nature of house is significant determinant of quality of life (Bhagat 2001: 1). Households experienced better and worse conditions of housing due to the development activities (Kumar 2014: 27-28).

It is reported from table 4.1 that 94.32 percent of sample households have Puckka houses, while 5.69 percent of households not have house. The village level analysis shows that respondents who belong to the Yusuf Nagar have highest house (98.41 percent), while lowest in Matti village (90 percent).

Likewise, more than 90 percent of households are using non-renewable sources for cooking, while only 8.55 percent are using renewable sources (Table 4.1). The village-level analysis reveals that households belong to the Ghuswalkal village (96.84 percent) are highly vulnerable using non-renewable sources for cooking, while the lowest households belonging to the Yusuf Nagar (83.37 percent).

Accessibility of safe drinking water is prerequisite for safe health. It is reported from Table 4.1 reveals that only 24.69 percent of respondents are had accessibility to safe drinking water, while 72.36 percent of respondents are drinking unsafe water. The village-level analysis shows that respondents who belong to the

New Garura village are the highest safe drinking water, while respondents who belong to Ghuswalka village are the lowest drinking safe drinking water.

Moreover, the majority of respondents are using latrine for sanitation, while only 1.62 percent of respondents are using open defecation for sanitation. The village-level analysis reveals that 100 percent of respondents belong to the Ghuswalkal and Yusuf Nagar is used latrine, while 96.67 & 96.84 percent belong to the Matti and New Garura villages. Why latrine percentage is high overall all the villages because of Swachh Bharat Mission (SBM). Under this scheme most of the household are benefited.

Lastly, mean age of households is 29.24 years, which varies from 26.67 years in Matti village to 32.16 years in Yusuf Nagar village. The mean consumption expenditure is 20, 363.19 INR, which varies from 19, 039.68 INR in Yusuf Nagar to 22, 543.16 INR in Ghuswalkal. Further, the mean income is 12, 004.04 INR, which varies from 7, 591.80 INR in Matti to 14, 703.21 in Yusuf Nagar (Table 4.1).

Table 4.1: Socioeconomic Characteristics of Sample Villages

Characteristics	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Overall
Social Group					
General Caste	0.00	21.05	12.90	7.94	10.47
Other Backward Caste	83.33	58.95	41.94	61.90	61.53
Scheduled Caste	16.67	20.00	45.16	30.16	28.00
Scheduled Tribe Caste	0.00	0.00	0.00	0.00	0.00
Religion					
Hindu	100.00	66.32	100.00	100.00	91.58
Muslim	0.00	33.68	0.00	0.00	8.42
Gender					
Male	93.33	90.53	87.10	85.71	89.17
Female	6.67	9.47	12.90	14.29	10.83
Nature of Family					
Nuclear	76.67	77.89	75.81	90.48	80.21

Joint	23.33	22.11	24.19	9.52	19.79
Education					
Illiterate	66.67	50.33	51.00	52.38	55.15
Literate	33.33	49.74	49.00	47.62	44.86
Occupation					
Employed	26.67	29.48	51.61	57.14	41.6
Unemployed	73.33	70.52	48.39	42.86	58.4
Nature of House					
Kaccha	10.00	6.32	4.84	1.59	5.69
Puccha	90.0	93.69	95.16	98.41	94.32
Source of Cooking					
Non- renewable	86.67	96.84	83.87	98.41	91.45
Renewable	13.33	3.16	16.13	1.59	8.55
Drinking Water					
Safe drinking water	50.00	15.97	20.97	23.81	27.69
Unsafe drinking water	50.00	84.22	79.03	76.19	72.36
Sanitation					
Latrine	96.67	96.84	100.00	100.00	98.38
Open Field	3.33	3.15	0.00	0.00	1.62
Mean Age	26.67	27.71	30.39	32.16	29.24
Consumption Expenditure	20716.67	22543.16	19153.23	19039.68	20363.19
Income	7591.8	11865.58	14703.21	13855.56	12004.04

Source: Field Survey Data, 2019. Note: Age in years, consumption expenditure and income are in INR, while other indicators are in percentage values.

4.2.1 Gender wise Education Level

Gender-wise, education is one of the important reasons for enrollment ratio based on gender (Jacob 2002: 589-598). Women are not more educated ratherthan the male (Hightower 2003: 471-498). Table 4.2 shows the status of gender-wise education. It is observed that 44.78 percent of male respondents are illiterate, while 55.22 percent of female respondents are illiterate. Further, as education-level increases the gender gap also increases in terms of education accessibility. The gender gap is 60.48: 39.52 at the primary education level, which is an increase 68.22: 31.78 at the higher secondary

level. Further also increases in professional courses. Only 23.53 percent of female respondents have taken admission in the professional courses, while 76.47 percent of male respondents have taken admission. In totality, gender-gap is identified in the various educational-level. Overall 32.78 percent family members are illiterate in the sample villages. Education is an issue of concern after displacement and land acquisition.

Further, a chi-square test is used to check the relationship between education and gender. It is clear from the chi2 test value (50.13) that there is a strong relationship between gender and education.

Table 4.2: Genderwise Education

Education Label	Gender		Total
	Male	Female	
Iliterate	193 (44.78*) (26.19**)	238 (55.22*) (41.18**)	431 (100.00*) (32.78**)
Primary	101 (60.48*) (13.70**)	66 (39.52*) (11.42**)	167 (100.00*) (12.70**)
Junior	103 (53.65*) (13.98**)	89 (46.35*) (15.40**)	192 (100.00*) (14.60**)
Higher Secondary	219 (68.22*) (29.72**)	102 (31.78*) (17.65**)	321 (100.00*) (24.41**)
Graduate	97 (60.62*) (13.16**)	63 (39.38*) (10.90**)	160 (100.00*) (12.17**)
Postgraduate	11 (40.74*) (1.49**)	16 (59.26*) (2.77**)	27 (100.00*) (2.05**)
Diploma/professional Cources	13 (76.47*) (1.76**)	4 (23.53*) (0.69**)	17 (100.00*) (1.29**)
Total	737 (56.05*) (100.00**)	578 (43.95*) (100.00**)	1,315 (100.00*) (100.00**)
Pearson chi2(6) = 50.1227 Pr = 0.000			

Source: Primary Survey Data, 2019. Note: * Row percentage **Column percentage.

4.2.2 Genderwise Occupation Level

The composition of the workforce by gender and their occupational positions in the economy has a significant impact on economic development (Dhagamwar at al 2003: 213). As a result of their reliance on others for their livelihood, the landless population is severely affected. Table 4.3 finds the relationship between gender and occupation. The gap between gender and occupational level is also identified. It is observed that male respondents are relatively less unemployed than female respondents. Further, more than 80 percent of male respondents are self-employed in agriculture, while only 17.65 percent of female respondents are employed in agriculture. 100 percent of males are working in agriculture as casual labor in agriculture, while none of the female respondents are working in agriculture. Respondents those have their own business, out of that, nearly 80 percent are male. More than 90 percent of government employees are male. In totality, Table 4.3 reveals that there is a wide gender gap in occupational level as the status of occupation changes from daily wage workers to business and government employees in the survey village. The chi-square test statistics show that there is a strong relationship between gender and occupation level.

Table 4.3: Genderwise Occupation Distribution

Occupation of the Population	Gender		Total
	Male	Female	
Unemployed	340 (40.28*) (46.13**)	504 (59.72*) (87.20**)	844 (100.00*) (64.18**)
Self-Employed in Agriculture	14 (82.35*) (1.90**)	3 (17.65*) (0.52**)	17 (100.00*) (1.29**)
Casual Labour in Agriculture	10 (100.00*) (1.36**)	0 (0.00*) (0.00**)	10 (100.00*) (0.76**)
Business	40 (78.43*)	11 (21.57*)	51 (100.00*)

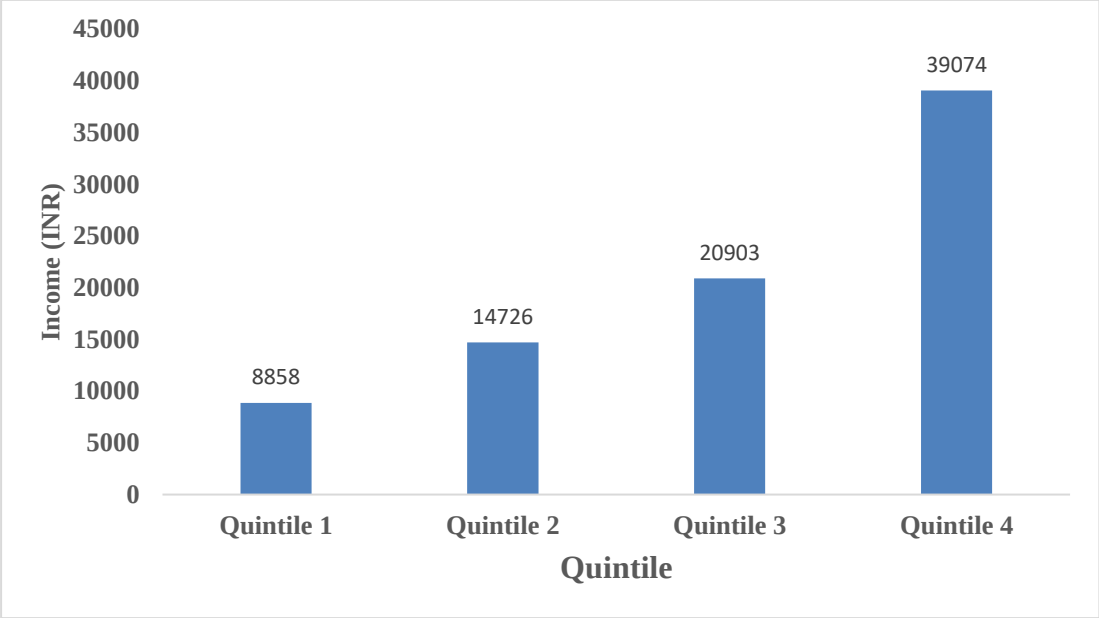
	(5.43**)	(1.90**)	(3.88**)
Government Employed	26 (96.30*) (3.53**)	1 (3.70*) (0.17**)	27 (100.00*) (2.05**)
Private Employed	156 (82.54*) (21.17**)	33 (17.46*) (5.71**)	189 (100.00*) (14.37**)
Daily Wage Labour	151 (85.31*) (20.49**)	26 (14.69*) (4.50**)	177 (100.00*) (13.46**)
Total	737 (56.05*) (100.00**)	578 (43.95*) (100.00**)	1,315 (100.00*) (100.00**)
Pearson chi2(6) = 241.2497 Pr = 0.000			

Source: Field Survey Data, 2019. Note: * Row percentage **Column percentage.

4.2.3 Quintile wise Income

The distribution of income can significantly impact aggregate economic activity in the economy (Galor and Zeira 1993: 35). Table 4.7 shows the income distribution quintile-wise. The majority of households fall in the First, quintile i.e. 67 households have mean income (8858 INR) and on the other hand, households that fall in the fourth quintile i.e., 62 households have mean income (39074 INR) reflects wide inequality in the income level.

Figure 4.2: Income Inequality



Source: Field Survey Data, 2019. Note: figures are in INR.

4.2.4 Change Income and Expenditure

The impact of the development project on the income and expenditure of displaced people is assessed by comparing the income and expenditure. The calculated mean monthly income and expenditure show that the income has declined by 29.57 percent, while mean monthly consumption expenditure has increased by 34.51 percent after displacement (Table 4.4) shows adverse impact of displacement on the livelihoods of sample households.

Table 4.4: Mean Monthly Income and Consumption Expenditure of Sample Household

Income	Mean
Before Displacement	29247.60
After Displacement	20600.40
Change (%)	29.57
Expenditure	
Before Displacement	9336.39

After Displacement	12557.93
Change (%)	34.51

Source: Field Survey Data, 2019.

4.2.5 Impact of Displacement on Accessibility of Drinking Water

Improved water resources and a more comprehensive water supply will help in increase country's Gross Domestic Product (GDP) and reduce poverty. Everyone has the right to enough, continuous, safe, and affordable water for personal and domestic use (WHO, 2014: 1).Land use change resulting from population growth places stress on urban water distribution systems (Mikovits et al 2014& 2018). Table 4.5 reflects the association of social group and water sources before and after displacement in the surveyed area. The results from the Table 4.5 reveal that respondents are now relatively more drinking unsafe water than that of before displacement. About 60 percent of the respondents belong to the general social group were drinking unsafe water before displace, while after displacement, 66.67 percent of respondents are drinking unsafe water. The intensity of unsafe drinking water increased in respondents belongs to the backward social group. It is reported from the Table 4.5 that before displacement, only 47.95 percent of respondents belong to the OBC social group were drinking unsafe water, which has been increased by 73.97 percent after displacement. Lastly, the intensity of unsafe drinking water for respondents has increased from 42.25 percent to 70.42 percent in post displacement period compare with pre-displacement period.

Table 4.5: Caste wise Source of Drinking Water

Social group	Before Displacement			After displacement		
	Unsafe	Safe	Total	Unsafe	Safe	Total
General	20 (60.61)	13 (39.39)	33 (100.00)	22 (66.67)	11 (33.33)	31 (100.00)
Other Backward Caste	70 (47.95)	76 (52.04)	146 (100.00)	108 (73.97)	8 (26.03)	116 (100.00)

Scheduled Caste	30 (42.25)	41 (57.75)	71 (100.00)	50 (70.42)	21 (29.58)	71 (100.00)
Scheduled Tribe	0 (0.00)	0 (0.00)	0 (100.00)	0 (0.00)	0 (0.00)	0 (100.00)

Source: Field Survey Data, 2019.

4.2.6 Displacement and Source of Cooking

The government campaigns to ensure that every household has access cooking fuel under Ujawal Yojan. Government has provided LPG connections at subsidised rate to the backward population. It is observed from the field survey that there are two factors contributing to the increase in the LPG ratio in the area. First, as a result of land acquisition and compensation, people were able to purchase LPG connection, which was made possible by the Ujjwala Yojana, which is the second reason. The results from Table 4.6 reported that respondents belong to the general social group was using LPG was only 27.27 percent before displacement, which is increased by 90.91 percent after displacement. Further, households belonging to the OBC social group were only 30.82 percent using LPG before displacement, which is increased by 96.58 percent after displacement. Similar results were also reported for respondents belonging to the Scheduled Caste.

Table 4.6: Caste wise Source of Cooking in the Survey Villages

Social Group	Before Displacement		Total	After Displacement/		Total
	LPG	Chulla		LPG	Chulla	
General	9 (27.27*) (12.86**)	24 (72.73*) (13.33**)	33 (100.00*) (13.20**)	30 (90.91*) (12.93**)	3 (9.09*) (16.67**)	33 (100.00*) (13.20**)
OBC	45 (30.82*) (64.29**)	101 (69.18*) (56.11**)	146 (100.00*) (58.40**)	141 (96.58*) (60.78**)	5 (3.42*) (27.78**)	146 (100.00*) 58.40**)
SC	16 (22.54*) (22.86**)	55 (77.46*) (30.56**)	71 (100.00*) (28.40**)	61 (85.92*) (26.29**)	10 (14.08*) (55.56**)	71 (100.00*) (28.40**)
Total	70 (28.00*) (100.00**)	180 (72.00*) (100.00**)	250 (100.00*) (100.00**)	232 (92.80*) (100.00**)	18 (7.20*) (100.00**)	250 (100.00*) (100.00**)

Source: Field Survey Data, 2019. Note: * Row percentage **Column percentage.

4.2.7 Displacement and Accessibility of Sanitation Facility

Sanitation is a critical component of overall health and well-being. After being displaced, the majority of the population in the survey area relied on latrines. Because the Swachh Bharat mission plan has a positive association with the study area, it is worth mentioning. The majority of the population made use of latrine that was made available through the Swachh Bharat Mission. Table 4.7 depicts the social group-wise relationship with sanitation facilities before and after displacement. It is reported from Table 4.7 that respondents belonging to the General social group before displace were only 48.48 percent using a latrine, which increased by 69.97 percent after displacement. Further, only 27.40 percent of respondents belonging to the OBC social group were using latrine before displacement, which increased by 96.58 percent after displacement. Lastly, only 18.31 percent of respondents belonging to the SC social group were using latrine before displacement, which increased by 98.59 percent after displacement.

Table 4.7: Impact of Displacement on Accessibility of Sanitation Facilities

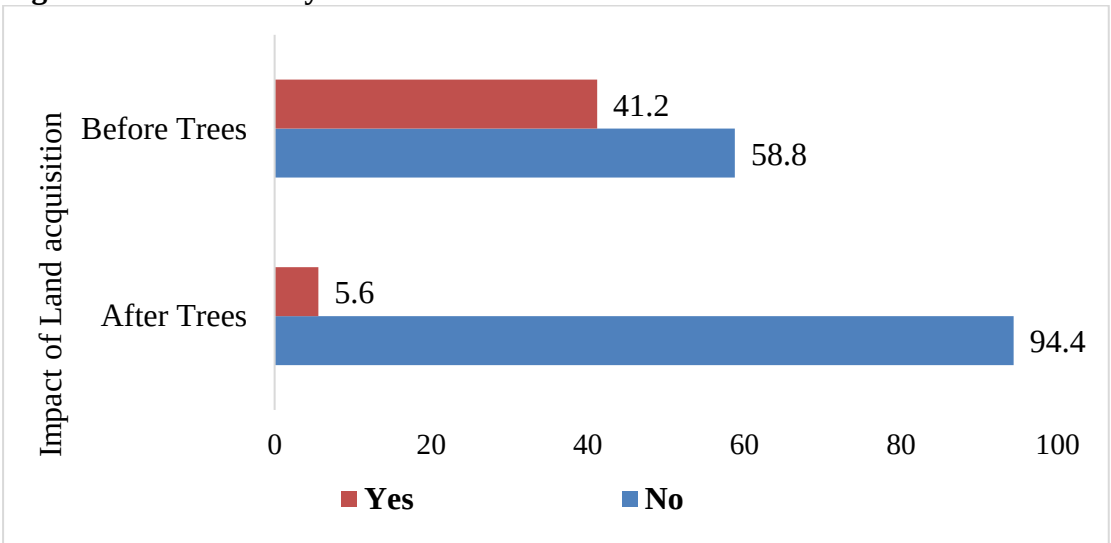
Social group	Before Displacement			After displacement		
	Latrine	Open Defecation	Total	Latrine	Open Defecation	Total
General	16 (48.48)	17 (51.52)	33 (100.00)	32 (69.97)	1 (3.03)	33 (100.00)
Other Backward Caste	40 (27.40)	106 (72.60)	146 (100.0)	141 (96.58)	5 (3.41)	146 (100.0)
Scheduled Caste	13 (18.31)	58 (81.69)	71 (100.00)	70 (98.59)	1 (1.41)	71 (100.00)
Scheduled Tribe	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Source: Field Survey Data, 2019.

4.2.8 Situation of Trees in the Survey Area

Trees are also held accountable in the study area because trees provide extra income other than agriculture. Further, wood from the trees is also used for cooking purposes. Nevertheless, due to the land acquisition process, the plantation of mango trees has declined. As illustrated in Figure 4.3, the actual status of trees differs between before and after land acquisition. Consequently, 41.2 percent of households stated that there were trees in the area before the land acquisition, whereas only 5.6 percent of households stated that there were trees remained after land acquisition. Thus, as a result of land acquisition, a large proportion of trees were cut down to clean the area for development projects.

Figure 4.3: Availability of Trees



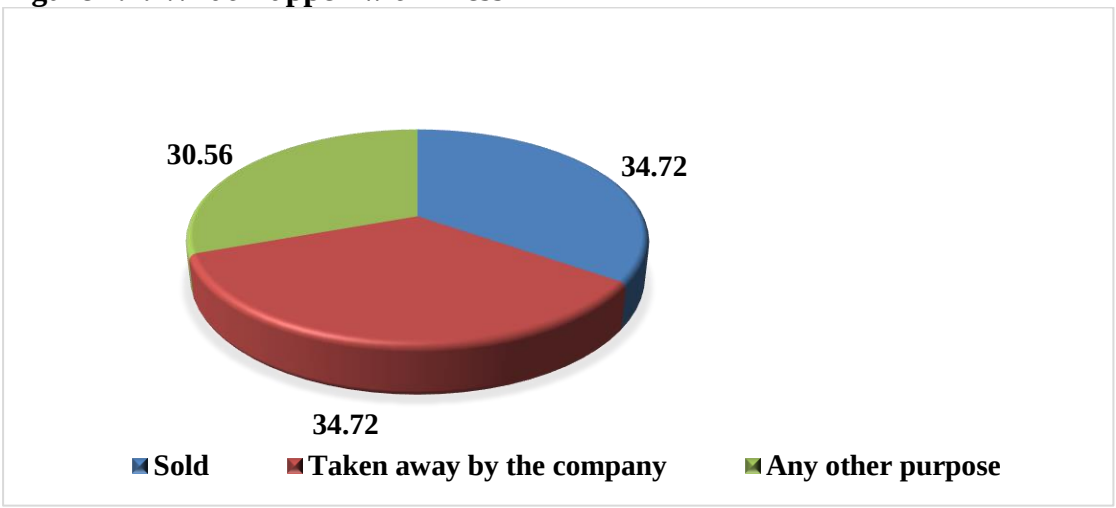
Source: Field SurveyData, 2019.

4.2.9 After Land Acquisition use of the Trees

Large numbers of trees were cut down after the land acquisition. People were not cut up some shrub. Unfortunately, though, some wood like to make money by selling the cut trees. This represents the income those trees lost from their owner's land. As shown in Figure 4.4, the good amount of trees has been reduced after land acquisition.

Responses of sample households collected from the field survey depicts that 34.72 percent of households said that they sold the trees and 34.72 percent also said trees were taken by the company.

Figure 4.4: What Happen with Tress



Source: Field Survey Data, 2019.

4.3 Compensation of Land

Land acquisition refers to the compulsory taking of land, which is often done against the will of the property owners (Alias et al. 2006: 326). However, many studies show people suffering more for compensation. Therefore, this section divided into two parts: compensation situation and second is compensation issues.

4.3.1 Situation of Compensation in the Survey Area

In the development policy, one of the most critical issues is compensation to the people those lost their land and livelihoods. In the absence of a welfare state, inadequate compensation for such groups has political and social repercussions (Ghatak and Mukharjee 2014: 303). Table 4.13 shows that 72.80 percent of the household got full compensation, while 15.60 percent got partial compensation.

Further, questions were also asked the respondents that after getting compensation, their living standard enhanced or deteriorated. In other words, the backwardness has increased or not after getting compensation. The results from the Table 4.8 revealed that 58.40 percent of respondents are responded that their living standard has enhanced and now they are living in better condition, while 41.60 percent of respondents are responded that their living standard has deteriorated after land acquisition. Because they don't get compensation is one reason and other reason is some of people spent the compensation amount not in a proper way such as drinking, smoking etc.

Table 4.8: Compensation Perspective

Get Compensation of Land	Responses
Yes	182 (72.80)
No	29 (11.60)
Partial	39 (15.60)
Total	250 (100.00)
Get Better Standard of Living	
Yes	146 (58.40)
No	104 (41.60)
Total	250 (100.00)

Source: Field Survey Data, 2019. Note: parenthesis values are percentage.

4.3.2 Issues related to Compensation facing by the Sample Household

Several issues are facing at the time of getting compensation to be project affected population. Table 4.9 illustrates that, first and foremost, the household wastes his or her time waiting for payment. 85.20 percent. The indicator of money loss was

answered affirmatively by 76.40 percent of the households. In addition, 68.00 percent said they paid bribes for getting compensation amount. Finally, the communication gap between authorities and land-loss victims' households are 40.40 percent saying there is a communication problem.

Table 4.9: Issues during Receiving Compensation

Issues	Yes	No	Total
Loss of Time for getting Compensation	85.20	14.80	100.00
Bribe for Compensation	68.00	32.00	100.00
Loss of Money	76.40	23.60	100.00
Communication Gap between Authority and affected People	40.40	59.60	100.00

Source: Field Survey Data, 2019.

4.4 Conclusion

The present chapter examines the socioeconomic characteristics of sample households and the status of land acquisition and compensation. The socioeconomic data of sample households reveal that majority of households are belonging to the OBC social group and Hindu religion, most of the people living in a nuclear family system. Income declines and expenditure increase after displacement, while income inequality has been increased. Further, it is observed that displacement has an adverse impact on a household's health. After displacement, the majority of sample households from all the social groups are drinking unsafe water, which causing health-related issues. On the other hand, with the help of Ujawal Yojna, now households are using safe and clean fuel for cooking than that before displacement. Though households using safe fuel. It is observed that majority of the sample households are using latrine for sanitation. Because of Swachh Bharat Mission implemented. Moreover, large-scale de-plantation is reported after land acquisition leads to a decline in biodiversity in the area.

Hence, following inferences can be drawn from the present chapter. First, there is an urgent need to reduce the income and consumption inequality in the sample villages. Second, households are facing livelihood crises after land acquisition, hence, appropriate employment and poverty reduction is a prerequisite to deal with the crisis. Third, half of the households don't get sufficient compensation against land and houses; hence, a transparent compensation policy is also needed with an awareness drive from land acquisition. Lastly, the majority of trees were cut down for development projects; hence, intensive plantation drive is needed to maintain biodiversity in the area.

Chapter 5

Assessing of Livelihood Vulnerability Status of Surveyed Villages

5.0 Introduction

Economic development promotes development of infrastructural projects and urban development such as irrigation, power, roads, transport, educational and health infrastructure, residential buildings, etc. (Ravindran and Kumar 2019: 249-250; Uddin et al: 833). Nonetheless, development of projects also harms people when they are forcefully relocated or lost their livelihoods (Adam et al 2015: 581-589). The existing vulnerability of displaced households is interrelated from their land acquisition. Land-acquisition induced vulnerability is felt equally by all families, but it differs in intensity depending on the household's social, economic, political geographical conditions. Information on wealth and livelihood vulnerability is available in the public domain, and this information can be used to assess livelihood vulnerability through the Vulnerability Assessment Method (Wirehn 2017: 5). The relationship between vulnerability and the derived indicators have been considered the contextual dependency of sub-indicators. Based on the practicality of the indicator-based approach, it is necessary to comprehend the concepts of vulnerability and livelihood. In the contemporary world, researchers, activists, politicians, academicians and executives debate on vulnerability question, which is complex in nature (Bunk et al. 2004: 1). For billions of people, the nature of their vulnerability is changing and intensifying, while their ability to cope is diminishing. Living in poverty and uncertainty severely restricts their ability to do their jobs. Therefore, food security, sustainable livelihoods, and poverty assessments are the primary focus areas for vulnerability assessments. This represents an anthropocentric conception of vulnerability in which people, their activities, their institutions, and the resource systems they rely on are at the centre of the analysis (Eakin and Luers 2006: 384).

Government and private investors have acquired vast tracts of agricultural land in the embankment of economic transformation in the world. The area acquired range from a few hundred hectares to thousands of hectares in size, depending on the size of project (Boche and Anseeuw 2013: 1-10). Land acquisitions expanded in developing countries and have now become a global issue on the one hand (Obayelu 2015: 409-411; Robertson and Pinstrup-Anderson 2010: 271-272), on the other hand, they continue to displace local inhabitants, reducing the community' access to land and water resources and escalating the problem of food scarcity in the country (Ojo 2008: 35). Many people displaced by big projects have experienced considerable adverse impacts on cultural, economic, health consequently make them asset-less, unemployed, indebted, hunger, and culturally disintegrated (Bartolome et al 1999: 4-15). In addition, native women and children are twice as likely to be displaced as non-natives. The physical removal from the home and the expropriation of productive lands and other assets are part of displacement (Downing 2002: 4-7).

A long shadow has been cast over rural households' livelihoods by the large-scale rural land acquisition projects for non-agricultural purposes (Li et al. 2018: 109-110). Acquiring land in developing countries like India has caused disturbing livelihood in local communities for the past several decades (Shee and Maiti 2019: 2997-2999). In broad term, livelihood is assets, strategies, activities, and other factors necessary for survival. Planned and implemented income restoration strategies minimise the impoverishment risks associated with project-affected individuals. The asset-based framework for understanding livelihoods has evolved into a powerful tool for analysing the vulnerabilities of affected people (Mallik 2017: 153-154). The recent episodes of land grabbing associated with large-scale land acquisition conducted by developing areas.

This chapter explores the fundamental objective of the study, i.e., livelihood vulnerability assessment of development project-affected people using field survey data collected from sample villages. The chapter has been broadly divided into four sections. Brief introduction was made in Section 1. Section 2 deals with the agriculture situation in the sample villages pre and post land acquisition, while livelihood vulnerability status of sample villages assessed in Section 3, concluding remarks are made in the 4sections.

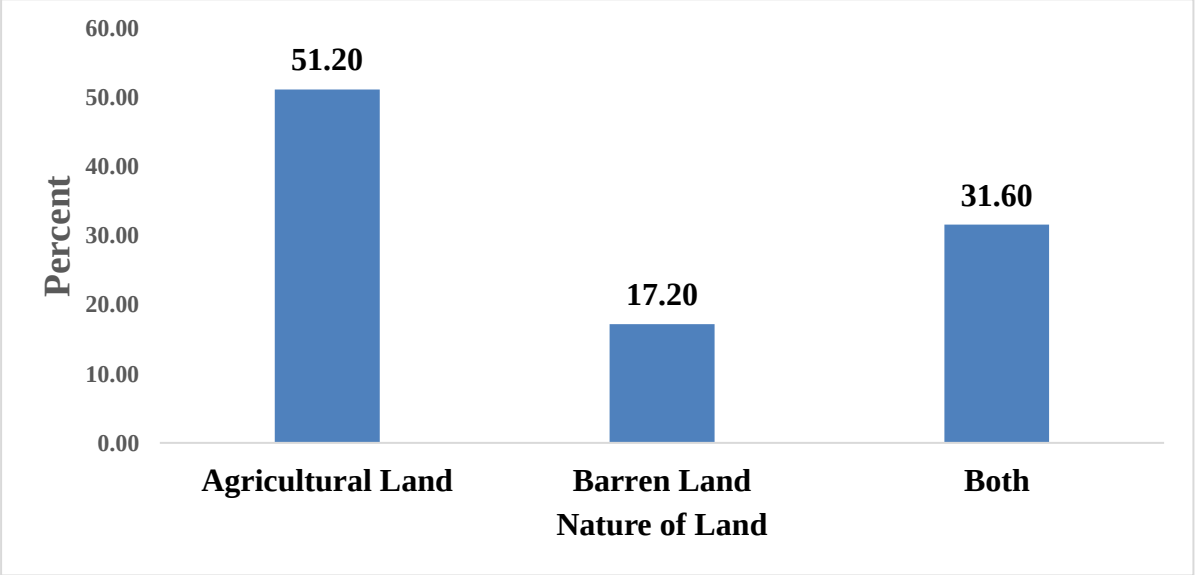
5.1 Agriculture Situation of the Sample Villages

The status of agricultural activities after land acquisition significantly declines. Due to land acquisition, some of the negative consequences take place, which include the loss of land, the loss of means of subsistence, the disruption of economic activities, the persistence of land-related disputes, the relocation of people to underdeveloped areas, and inadequate and late compensation (Kusiluka et al 2011: 66). Development and resettlement of rural village income and landholdings vary by resettlement status at the household level. After the displacement of people, the investigation of the situation is accounted by measuring income, land and agricultural products (Galipeau et al 2013: 437; Gong et al 2020: 1-3). Additionally, the importance of income and capital in agriculture is significant compared to measure the effect of socio-economic indicators on livelihood (Gong et al 2020: 3-4).

Figure 5.1 depicts the nature of land ownership of sample households before land acquisition. It is observed that half of the sample households own agricultural land, while 17.20 percent of households own barren land. Further, 31.60 percent of households own a mixture of agriculture and barren land. In other words, farming was the main occupation for half of the sample households before the land acquisition, and

land that was acquired was highly fertile. They are growing rice and wheat crops on fertile land, while they planted mango orchids on the barren and less fertile land which does not only provide regular and assured income, while also an ecologically sustainable environmental point of view. On the other hand, when they are displaced after land acquisition, they don't have land for cultivation. This resulted in employment scarcity for an unskilled population in the sample villages.

Figure 5.1: Nature of Land Ownership



Source: Field Survey Data, 2019.

5.1.1 Impact of Land Acqusition on Agriculture Production

Table 5.1 depicts the impact of land acquisition on agriculture production in the sample villages. There are three main crops grown in the sample villages namely wheat, rice, and mango. It is observed that the wheat crop is substantially declining after land acquisition in all the villages. It is observed that wheat production has the highest decline in Yusuf Nagar i.e., 18.20 percent, and lowest in Matti village i.e., 4.18 percent. Further, rice production has also the highest decline in Yusuf Nagar i.e., 17.66 percent, and lowest in Matti village i.e., 10.54 percent. As far as mango production is concerned, it has the highest decline in Matti village i.e., 11.54 percent

and lowest in Yusuf Nagar village i.e., 4.80 percent. In totality, land acquisition has adversely affected the crop production in the sample villages leading to food insecurity.

Table 5.1: Changes in Crop Production Before and After Land Acquisition

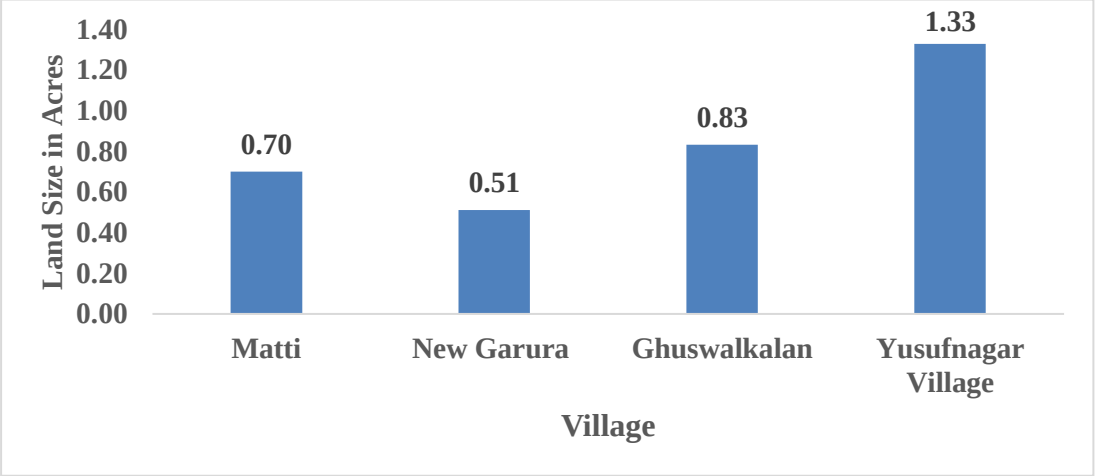
Crop	Period	Matti	New Garura	Ghuswalkalan	Yusuf Nagar
Wheat	Before	931.58	1603.78	959.32	641.61
	After	892.60	1462.28	825.62	524.85
	Change (%)	4.18	8.82	13.94	18.20
Rice	Before	628.57	588.62	650.00	528.53
	After	562.32	520.54	551.24	435.21
	Change (%)	10.54	11.57	15.19	17.66
Mango	Before	6, 500	6, 759	5,800	6, 250
	After	5,750	6, 200	5,450	5,950
	Change (%)	11.54	8.27	6.03	4.80

Source: Field Survey Data, 2019. Note: figures are in kilogram per acre.

5.1.2 Size of Acquired Land in the Survey Villages

Land has been the subject of numerous heated debates in India over the last many decades, particularly concerning its role as a source of economic development (Chakravorty 2014: 488; Bimonte 2017a: 36-43; Bimonte 2017b: 800-808). Figure 5.2 shows mean land acquisition from the sample villages. It is observed that land was highest acquired from Yusuf Nagar village (0.70 acre), while lowest from Matti village (0.70 acre). Figure 5.2 also reveals inequality in the land acquisition.

Figure 5.2: Mean Land Acquired in Sample Villages



Source: Field Survey Data, 2019. Note: figures are in Acres.

5.2 Livelihood Vulnerability Approach

Livelihood is defined as adequate stocks and flows of food, clothes and shelter to meet basic needs, while security refers to secure ownership of, or access to, resource and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long-term basis. A household may be enabled to gain sustainable livelihood security in many ways-through ownership of land, livestock or tress; rights to fishing or farming; through stable employment with adequate remuneration; or through varies repertoires of activities.

As Chamber and Conway define livelihood in his novel work (1992: 1-30) that a livelihood comprises the capabilities, assets including both material and social resources and activities required for a means of living. A sustainable livelihood is sustainable when it's coping with and recover from stress and shock, maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. Further, household livelihood security is often influenced by the ability of the household to diversify livelihood sources and assets (Slater 2002: 1-3; Singh and Singh 2018: 41-49). This shows that the more livelihood strategy and asset (the bigger its capacity and asset) that have in the household are having a chance more secure livelihood than a household have less livelihood assets.

On the other hand, vulnerability is characterized as insecurity in the well-being of individuals, households, and communities in the face of changes in their external environment. People move in and out of poverty and the concept of vulnerability captures the processes of change better than poverty line measurements. Vulnerability has two faces: an external side of shocks (our case land acquisition), seasonality's,

and critical trends; and an internal side of defenselessness caused by lack of ability and means to cope with these. The vulnerability context includes:

- Shocks, e.g., conflict, illnesses, floods, storms, droughts, pests, diseases
- Seasonality, e.g., prices, and employment opportunities
- Critical trends, e.g., demographic, environmental, economic, governance, and technological trends.

Further, livelihood vulnerability can be a function of both physiological and social factors. Physiological vulnerability is the extent to which communities are exposed to physical effects such as land acquisition, increase in temperature, change and environmental conditions. Such exposure to land acquisition increases rural livelihood vulnerability and reduces households'' ability to cope with risk, shocks and stress if proper resettlement and compensation planning not executed. Rural households often have limited assets and thus adaptive capacity. The social vulnerability can include factors such as relative inequality, the degree of land acquisition, and the rate of economic growth (Singh and Singh 2019: 878-89).

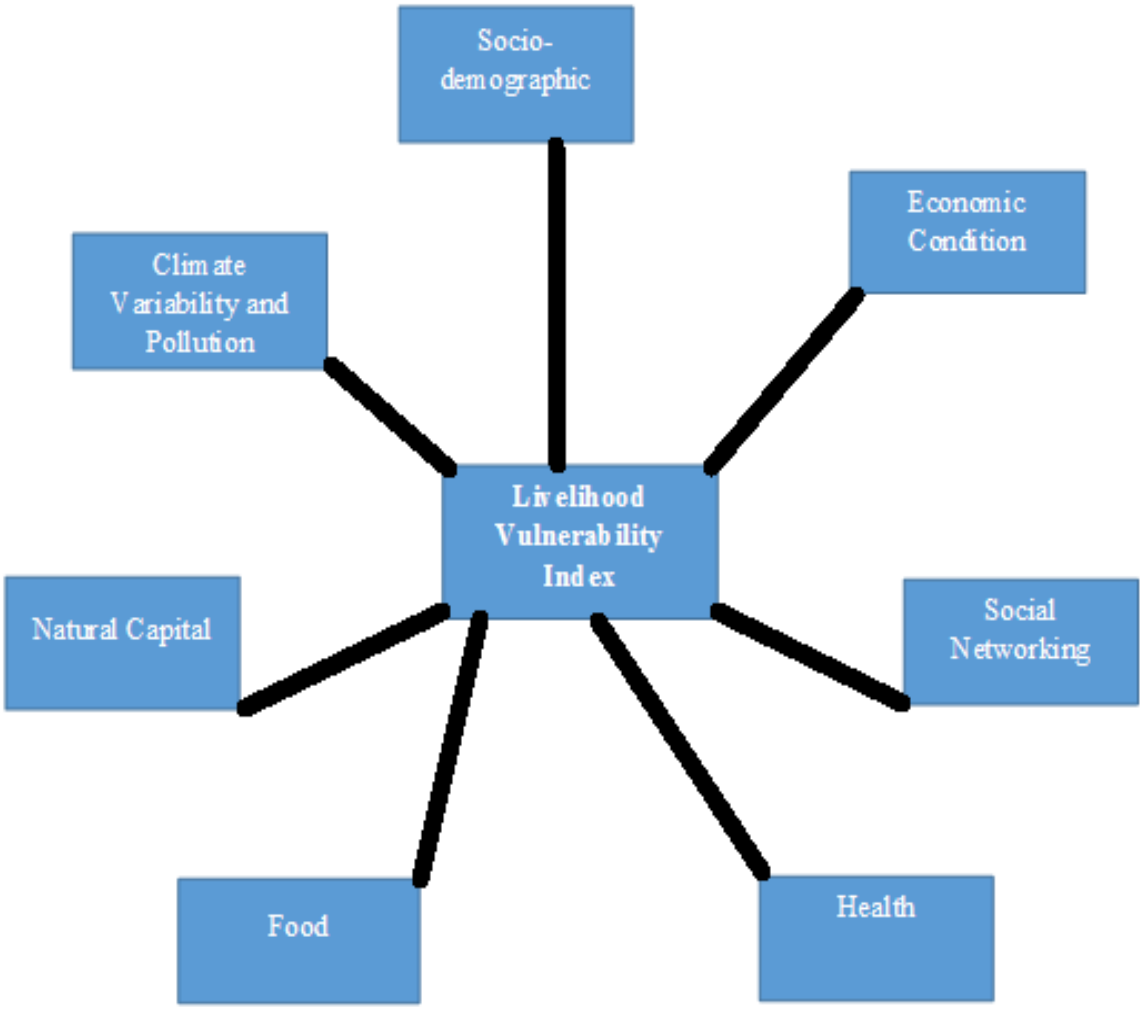
Vulnerability assessments have become a core means of understanding development challenges and land acquisition influence in many contexts. Such assessments can encompass the numerous methods utilized to systematically consider interactions between humans and their environmental surrounding, including physical and social aspects. Approaches to vulnerability assessment include comparative analysis, statistical analysis, indicator-based methods, and agent-based modeling (Singh et al 2019: 1-14). Recently, the indicator-based method has been widely used to assess vulnerability to land acquisition and other disasters. Almost all the approaches use indicators to characterize and quantify the different dimensions of vulnerability. With the common practice is being to combine the diverse indicators into a single

composite index. The indicator approach has been used at different scales and domains to quantify system dynamic.

In this chapter, Livelihood Vulnerability Approach (LVA) (Fig. 5.3) has been used to understand household's livelihood vulnerability and to plan community development programs for displaced population. This approach considers seven dimensions of households' vulnerability i.e., socio-demographic, economic, social networking, health, food, natural capital and climate variability and pollution, uses multiple indicators to asses livelihood vulnerability (Adger et al 2004: 19-42; Eakin et al 2008: 112-127)

A major work in livelihood vulnerability assessment is that of, who developed two approaches. They first expressed Livelihood Vulnerability Index (LVI) as a composite index, comprising seven major components. The second approach was based on the vulnerability definition of the Intergovernmental Panel on Climate Change (IPCC), whereby they decomposed the seven components into three: based on exposure, sensitivity, and adaptive capacity. The LVI approaches consist of variables indicating the level of exposure, sensitivity and adaptive capacity to land acquisition. The LVI indicates a way to understand how vulnerability varies across time end space end to identify the main factors contributing to vulnerability, highlight strategies reducing the vulnerable level, and also evaluate how efficient these strategies are in different social and ecological environments.

Figure 5.3: Components of Livelihood Vulnerability Index (LVI)



Source: Author's Mapped, 2021

There are numerous literatures on the indicator-based livelihood approach. Based on Iyenger and Sudarshan (1982: 2047-2051), Hahn and colleagues (2009: 74-88), Selvaraju et al (2006: 6-10), Sujakhu et al (2019: 2977), Shah (2013: 127-137),Madhuri et al (2014: 1-13), Wirehn (2018:63-74), Eriksen and Kelly (2007: 495-99), the present chapter have used the indicator approach to access the vulnerability of four sampled villages viz., Matti, New Garura, Guswalkalan, Yusuf Nagar in the Lucknow, Uttar Pradesh.

Study have adopted Iyenger and Sudharshan (1982: 2047-51) methodology for the normalization of data, as study uses different data such as social group, gender,

income and consumption expenditure, hence, normalization of data is prerequisite before estimating LVI. After being normalized to a scale of zero (0) to one (1) based on their functional relationship with the dimension, the indicator has a positive relationship with LVI, equation (1) was used to calculate the indicator's value.

$$Y_{ij} = \frac{K_{ij} - Min(X_{ij})}{Max(X_{ij}) - Min(X_{ij})} \quad (1)$$

Where, Y_{ij} is the index for the i[th] indicator related with j[th] village, K_{ij} is the actual/observed value of i[th] indicator for the j[th] village, $Max(X_{ij})$ and$Min(X_{ij})$ is the maximum and minimum value of i[th] indicator among all the J (I= 1……4) village, respectively. If the indicator has a negative functional relationship with LVI, then equation 2 was employed.

$$Y_{ij} = \frac{Max(X_{ij}) - K_{ij}}{Max(X_{ij}) - Min(X_{ijk})} \quad (2)$$

Weight

The assignment of appropriate weight for different components is an important issue in the construction of an index. Therefore, using equation (3 & 4), weights were calculated for each indicator.

$$[W_i = \frac{K}{\sqrt{Var(Cid)}}] \quad (3)$$

$$Where, [K = \frac{1}{\left\{\frac{1}{\sum_{i=1}^{n}\sqrt{Var(Cid)}}\right\}}] \quad (4)$$

Where 'Wi' denotes the weight,$Var(Cid)$ is variance of Y_{ij}. Weight is multiplied in the index value (normalized values) calculated in equation 1 or 2.

$$Z_j = \frac{\sum_i^k Y_{ij} * W_i}{\sum_i^k W_i} \quad (5)$$

Z_j is the index score for the j^{th} village,W_i is the weight corresponding to i^{th} indicator, k is the total number of indicators; and $\sum_i^k W_i$ is the summation of weights. The index value close to zero (0) shows lower livelihood vulnerability and the index value close to one (1) shows higher livelihood vulnerability. Further, study apply the LVI and reference to work of Hahn et al (2009: 74-88) but have modified or added a number of new indicators relevant to the Lucknow district, displaced and land acquired population to between understand the livelihoods of local people and explore the main factors affecting the vulnerable of households to land acquisition. This research contributes to the literature concerning the assessment of vulnerability of rural households and provides a reference for policy making aimed at helping people living in similar economic and natural regions.

Table 5.2: Selection of Rationalized Indicators to Develop a Livelihood Vulnerability Index

Major Component	Sub-Component	Functional relation with LVI	Explanation
Socio-demographic Condition	Nature of family	-	It is expected that family members are living in joint family system are more capable to deal with livelihood crisis i.e., displacement
	Social group (SC/ST)	+	In the Indian society, scheduled caste (SC) and scheduled tribes (ST) are highly vulnerable, it means if land of SC & ST acquired then there is higher probability that they will be highly vulnerable.
	Education	-	Higher education has negative relationship with livelihood vulnerable. Educated people can easily cope up in new environment
	Gender	-	Male headed households are having higher adaptive capacity to deal with disaster i.e., displacement
	Age	-	An experienced household is relatively less vulnerable
	Religion	-	It is expected that household belonging to Hindu religion is less likely to be vulnerable
	Marital Status	-	It is expected that a married person will be more capable to deal with vulnerability
Economic Condition	Income diversification	-	Households those are diversify their income pattern can easily deal with any disaster and less vulnerable

			than that of others
	Consumption Expenditure	-	Higher consumption expenditure reveals higher nutritional and food security and lower vulnerability from their counter parts
	Livestock	-	Livestock provides extra income, and lowers degree of vulnerability
	Fertile land	-	Highly fertile land enables households to diversify their cropping pattern which leads to higher income
	T.V.	-	Households have basic amenities such as telephone and television, toilet, bathroom, fan are lower vulnerable
	Refrigerator	-	It is expected that access of refrigerator leads to lower economic vulnerability
	Motorcycle	-	It is expected that households having motorcycle will be less vulnerable than that of others
	Occupation	-	Households having regular income sources will be lower economic vulnerability
	Nature of house	-	All Pakka House provides safety from any natural disaster, which contributes in economic sustainability
Social Networking	Type of Compensation	-	Compensation was paid against land acquisition such as land to cash, land to land +construction cost of house, 1+2
	Better income probabilities	-	If better earning probabilities are available after land acquisition, then definitely it helps in lowering degree of vulnerability
	Better standard of living	-	If land acquisition has better resettlement and redevelopment plan for displaced population, then surely it provides better living standard and help in lowering vulnerability
	Income restoration	-	If employment opportunities are given according to the skilled of the displaced population, then it helps in income restoration and will lower vulnerability
	Sufficient Income	-	If households having sufficient income for survival, it means there is definitely lower degree of vulnerability
	Finding Jobs	-	If working population are getting employment nearby settlements then it definitely helps in lowering vulnerability
Health	Household suffering from a disease	+	Any household member suffering any disease leads to higher health expenditure will add additional layer in the existing vulnerable system
	Distance of hospital from village	+	Distance from the hospital sometimes will leads to mortality, hence, leading to the vulnerability
	Health cost increased	+	Higher health cost leads to lower resources for consumption expenditure that resulted higher livelihood vulnerability
	Sanitation facility	-	It is expected that the sanitation facility provides safety from health diseases lowering health vulnerability.
	Renewable cooking source	-	Renewable cooking sources such as LPG, leads to lower health vulnerability

	Safe Drinking Water	-	Households getting regular and continuous safe drinking water that means they are less vulnerable than that of those are drinking unsafe drinking water
Food	Get sufficient food per day	-	Household members are getting sufficient food leading lower livelihood vulnerability
	Days in a year get food	-	It is expected that higher number of days a household get food in a year will lower food vulnerability
	Consumption pattern	-	It is expected that diversify consumption pattern leading lower livelihood security
	Ration Card	-	Households having ration card then they will get free and subsidized ration from the fair price show, which lower expenditure on consumption
Natural Capital	Plantation	-	If sample villages are having intensive plantation, then it will help in ecological sustainability leading to lower vulnerability
	Income from plantation	-	Intensive plantation provides income and help in lowering vulnerability
	De-plantation	+	Development project needed clean land, hence, de-plantation started which is not ecologically sustainable
	Source of irrigation	-	Households getting sufficient and regular water for irrigation will help in lowering vulnerability
Climate Variability and Pollution	Increase in temperature	+	It is expected that increase in temperature leads higher degree of vulnerability
	Increase in Heat Wave intensity	+	It is expected that heat waves are adversely affected to the human-health adding additional layer of vulnerability
	Increase in Air pollution	+	Higher air pollution increases cases of lung disease, asthma
	Increase in Noise pollution	+	Higher noise pollution leads to hear and other problems in the nearby construction site.
	Increase in Dust Pollution	+	Development project also leads to dust population nearby construction site, which increases degree of vulnerability
	Decline in Water Quality	+	Construction work needs water, hence, new bore wells have dig to get water which decline the quality of water leading to higher vulnerability
	Environment degradation	+	Construction work along with air, dust, noise pollution leading to decline environmental quality as a whole and will increase the degree of vulnerability
	Impact assessment	-	If environmental impact assessment was carried out before staring any development project and all the stockholders are taken in the consideration, then it helps in lowering degree of vulnerability

Source: Field Survey Data, 2019.

5.3 Status of Livelihood Vulnerability of Sample Villages

The present study assumes that livelihood vulnerability is classified into seven sub vulnerability components namely socio-demographic, economic, social networking, health, food, natural capital, and Climate Variability and Pollution.

5.3.1: Socio-Demographic Vulnerability Index (SDVI)

Table 5.3 depicts the status of the socio-demographic vulnerability of sample villages. Social data such as religion, marital status, and social group, and demographic data such as nature of family, education, gender, and age were used to develop socio-demographic indices. It is reported from Table 5.3 that New Garura village has the lowest socio-demographic vulnerability, while Yusuf Nagar village has the highest vulnerability. Further, indicator level analysis reveals that the nature of family (joint), household belonging to the social group, education, gender, and age are contributing factors to lower vulnerability than that of Yusuf Nagar village.

Table 5.3: Status of Socio-Demographic Vulnerability Index for Sample Villages

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Nature of family	0.063	0.062	0.057	0.070	8
Social group (SC/ST)	0.045	0.039	0.052	0.050	7
Education	0.045	0.055	0.057	0.060	6
Gender	0.005	0.007	0.010	0.011	15
Age	0.039	0.042	0.041	0.042	27
Religion	0.079	0.052	0.079	0.079	3
Marital Status	0.079	0.079	0.076	0.079	33
Socio-demographic	0.355	0.338	0.373	0.391	

Vulnerability Index					

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.2: Economic Vulnerability Index (EVI)

Table 5.4 depicts the economic vulnerability of sample villages. Indicators such as income diversification, consumption expenditure, number of livestock, fertile land, occupation, and access to basic amenities by households. The calculated economic vulnerability index reveals that New Garura village has the lowest economic vulnerability (i.e., 0.536), while Yusuf Nagar has the highest economic vulnerability (i.e., 0.565). Further, indicator level analysis reveals that lowest-income diversification, less livestock, less fertile land, and less access to basic amenities of households belonging to the Yusuf Nagar village for lower economic vulnerability than that of New Garura village.

Table 5.4: Economic Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Income diversification	0.192	0.187	0.198	0.198	24
Consumption Expenditure	0.041	0.034	0.029	0.030	5
Livestock	0.110	0.102	0.113	0.113	21
Fertile land	0.084	0.087	0.094	0.094	10
Refrigerator	0.038	0.038	0.049	0.038	13
Motorcycle	0.016	0.019	0.009	0.021	7
Occupation	0.031	0.027	0.027	0.019	7
Nature of house	0.039	0.043	0.044	0.052	13
Economic Vulnerability Index	0.552	0.536	0.563	0.565	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.3: Social Networking Vulnerability Index (SNVI)

Table 5.5 depicts the social networking vulnerability status of sample villages. Data such as compensation against land acquisition, income probabilities, standard of living, income restoration, sufficient income, and getting the job were used to develop

social networking vulnerabilities indices for sample villages. Social networking vulnerability index reveals that New Garura village has the highest vulnerability (i.e., 0.330), while Ghuswalkalan village has the lowest vulnerability (i.e., 0.311). Further, cross-indicator analysis reveals that less compensation of acquired land and less income probabilities are contributing indicators for higher social networking vulnerability in the New Garura village than that of Ghuswalkalan village.

Table 5.5: Status of Social Networking Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Compensation type	0.050	0.038	0.045	0.063	11
Better income probabilities	0.106	0.076	0.046	0.047	4
Better standard of living	0.011	0.035	0.071	0.063	4
Income restoration	0.003	0.100	0.001	0.001	2
Sufficient Income	0.100	0.035	0.104	0.109	3
Finding Jobs	0.043	0.046	0.045	0.047	75
Social Network Vulnerability Index	0.313	0.330	0.311	0.329	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.4: Health Vulnerability Index (HVI)

Table 5.6 depicts the health vulnerability status of sample villages. Indicators such as households suffering from a disease distance from the hospital, and access to a sanitation facility, renewable cooking sources, and safe drinking water were used to develop health vulnerability indices for sample villages. The calculated health vulnerability index for sample villages reveals that New Garura (i.e., 0.096) has the highest health vulnerability, while Ghuswalkalan has the lowest vulnerability (i.e., 0.082). The cross-indicator level analysis reveals that distance of the hospital and less accessibility of renewable cooking source is contributing indicators for higher health vulnerability in New Garura village.

Table 5.6: Status of Health Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Household suffering from a disease	0.011	0.009	0.001	0.001	3
Distance of hospital from village	0.013	0.012	0.013	0.013	57
Health cost increased	0.008	0.005	0.001	0.001	3
Sanitation facility	0.024	0.024	0.025	0.025	26
Renewable cooking source	0.022	0.024	0.021	0.025	7
Safe drinking water	0.016	0.021	0.022	0.023	4
Health Vulnerability Index	0.094	0.096	0.082	0.087	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.5: Food Vulnerability Index (FVI)

Table 5.7 depicts the status of food vulnerability of sample villages. Indicators such as households getting sufficient food, the number of days households got food in a year, consumption pattern, and access to ration card were used to develop a food vulnerability index for sample villages. The calculated food vulnerability indices reveal that the Yusuf Nagar village has the highest food vulnerability (0.832), while lowest in Matti village (0.365). The cross-indicator analysis reveals that households are less getting food in a year and less diversify their consumption pattern in Yusuf Nagar village than that of Matti village.

Table 5.7: Status of Food Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Get sufficient food per day	0.042	0.066	0.013	0.007	42
Days in a year get food	0.028	0.039	0.074	0.369	7
Consumption pattern	0.255	0.309	0.325	0.331	32
Ration Card	0.042	0.170	0.161	0.125	19
Food Vulnerability Index	0.365	0.585	0.573	0.832	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.6: Natural Capital Vulnerability Index (NCVI)

Table 5.8 depicts the natural capital vulnerability index for sample villages. Indicators such as plantation, income from plantation, de-plantation, and source of irrigation

were used to develop the natural capital vulnerability index. The calculated natural capital vulnerability indices for sample villages reveals that the Ghuswalkalan village has the highest vulnerability (i.e., 0.298) and lowest in Matti village (i.e., 0.219). The cross-indicator analysis reveals that the lower plantation subsequently lower income from plantation and highest de-plantation were contributing factors for natural capital vulnerability in Matti village than that of Ghuswalkalan village.

Table 5.8: Status of Natural Capital Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Plantation	0.035	0.075	0.080	0.079	9
Income from plantation	0.077	0.084	0.087	0.088	37
De-plantation	0.023	0.039	0.050	0.041	17
Source of irrigation	0.084	0.072	0.081	0.082	37
Natural Capital Vulnerability Index	0.219	0.270	0.298	0.289	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.7: Climate Vulnerability and Pollution Vulnerability Index (NCVI)

Table 5.9 depicts the climate variability and pollution vulnerability status of sample villages. Indicators such as an increase in temperature, air, noise, dust pollution, the decline in water quality, environmental degradation, and impact assessment before starting a development project. The calculated Climate vulnerability and pollution vulnerability index shows that Ghuswalkalan (i.e., 0.343) has the highest vulnerability, while Matti (i.e. 0.304) has the lowest vulnerability. The cross-indicator analysis reveals that households belonging to Ghuswalkalan are relatively the highest perceived that temperature increase, dust pollution, and decline in water quality from Matti.

Table 5.9: Status of Climate Variability and Pollution Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Weight
Status of temperature	0.022	0.025	0.025	0.017	6
Increased Heat Waves	0.037	0.039	0.042	0.049	5

Air pollution	0.039	0.048	0.057	0.054	3
Noise pollution	0.054	0.051	0.057	0.049	7
Dust Pollution	0.056	0.055	0.055	0.056	43
Water Quality decline	0.017	0.016	0.014	0.016	24
Environment degradation	0.041	0.046	0.051	0.053	4
Impact assessment	0.038	0.045	0.041	0.044	8
Climate Variability and Pollution	0.304	0.325	0.343	0.337	

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.3.8: Livelihood Vulnerability Index (NCVI)

By using equation (5), livelihood vulnerability indices were calculated for sample village (Table 5.10). The calculated livelihood vulnerability indices reveal that Yusuf Nagar village has the highest vulnerability than that of other villages. The cross-index analysis shows that the higher socio-demographic, economic and food vulnerabilities are the main contributing factors responsible for higher vulnerability of households belonging to Yusuf Nagar than that of other villages.

Table 5.10: Status of Livelihood Vulnerability Index

Indicators	Matti	New Garura	Ghuswalkalan	Yusuf Nagar
Socio-demographic	0.355	0.338	0.373	0.391
Economic	0.552	0.536	0.563	0.565
Social Networking	0.313	0.330	0.311	0.329
Health	0.094	0.096	0.082	0.087
Food	0.365	0.585	0.573	0.832
Natural Capital	0.219	0.270	0.298	0.289
Climate Variability and Pollution	0.304	0.325	0.343	0.337
Livelihood Vulnerability	0.315	0.354	0.363	0.404

Source: Field Survey Data, 2019. Note: weight values are in percent.

5.4 Conclusion

The present chapter starts with the objective to access the livelihood status of sample villages. Field survey data and indicator approach under sustainable livelihood security, livelihood vulnerability was calculated for sample villages. Rationalized socio-demographic, economic, natural capital and climate variability, and air pollution

indicators were chosen to keep in the centre of displaced population and development projects in the sample villages. The calculated livelihood vulnerability index reveals that Yusuf Nagar village has the highest livelihood vulnerability than that of other villages. After care-fully investigation of rational indicators, the following inferences can be drawn. First, sample villages are backward in terms of access to basic amenities. Second, the degree of livelihood vulnerability is varied from village to village. Third, asymmetric information of compensation package, weaker social fabric, and illiteracy are some of key determines for the higher vulnerability of households belonging to the Yusuf Nagar village. Lastly, an increase in temperature, air pollution has resulted in climate variability increasing health and food vulnerability in the surveyed area.

Chapter 6

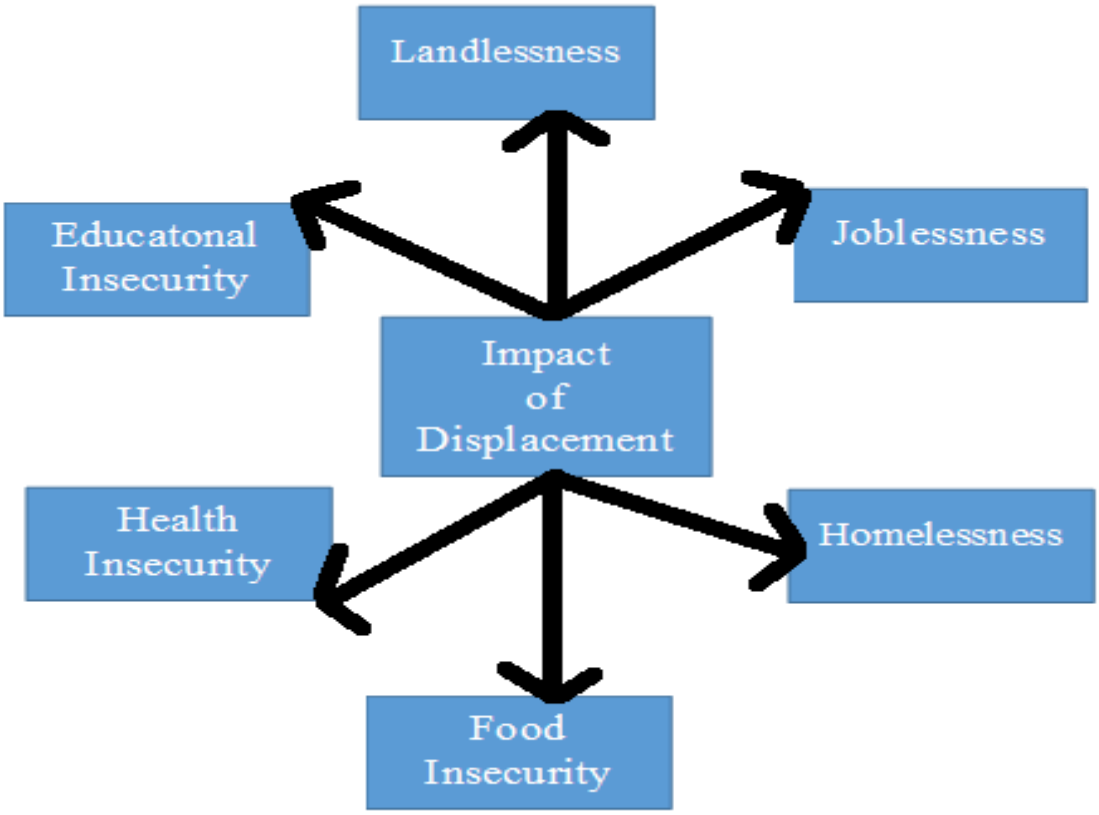
Impoverishment Risk and Environmental Quality

6.0 Introduction

Economic development has the main agenda in the planning of any civil society or social capital (Mžavanadze 2009: 397). If resources and skills are channelized in the right direction, development shall be sustainable and fruitful for present as well as future generations, otherwise, it would be a disaster, development crisis as we observing nowadays (Dwivedi 2002: 709). As far as requirement of resources for development are concerned, the land prerequisites for any development activities (Adam et al 2015: 1). For instance, if we want to accommodate a large-scale migrated population in the urban cities, we need land, which is limited and scarce; hence, we have changed land-use pattern and converted agricultural land into commercial land. This creates a serious problem for an unskilled rural population whose land has been acquired (Cernea 2004: 1-7; Cernea 1997: 3). First, people are forcefully displaced, which lead to rehabilitation problem. Second, displaced people are highly vulnerable and faced occupational challenges, as they are not skilled to get employment in the new environment where only skilled persons are required such as industry, and service sector (Adri and Simon 2018 321-336). Required labour should be skilled to operate modern tools and machines. Third, they have lost their religious and cultural values, and are unable to continue with them as the prime objective is how to survive in the new environment. Lastly, displaced people in the absence of land live in the slums with limited livelihood resources. Development processes burden vulnerable groups, and their losses go far beyond monetary value (Thukral 1996: 1500-1503). Impoverishment could occur due to unstructured displacement (Parasuraman 2016: 17-20).

A pioneer work on displacement was done by Cernea (1999& 2000). She has examined the nature, caused, consequences, and implications of displacement in both the developing and developed world using grass-root data. After careful study of displacement, Cernea (2000: 3662-3664) has identified six risks that displaced people faced across the globe i.e., landlessness, joblessness, homelessness, marginalization, food insecurity, morbidity, and mortality, education. Further, Muggah (2000: 133-145) and Downing (2002: 5-20) have identified two more risks apart from the Cernea identified i.e., access to community services and violation of human rights (fig. 6.1).

Figure 6.1: Impact of Displacement



Source: adopted from Cernea, 2000

Because land is acquired from the displaced people, they become landless lead to livelihood security issues. Further, the majority of people whose land is acquired are doing agriculture previously, and now the land is acquired, hence, they are now

jobless too. The landless population also will face employment issues, as they are not skilled to do other work apart from agricultural activities. Now, landless and jobless people are also homeless and forced to live in unorganized settlements i.e., slums with limited resources. While, previously they are living with a dignified life, now they are living bottom of the society with limited employment opportunities and without having property rights. In other words, displace people now become marginalized having the highest food and nutritional insecurity, because of fewer employment opportunities and limited income, and they hardly get a nutritional diet. This leads to morbidity and mortality cases, which are highest in the urban unorganised settlements i.e., slums. Moreover, because the displaced population doesn't have land, they are also restricted to access to the common property resources by local community leads to social discrimination as identified by Muggah (2000: 120-150) and Downing (2002: 10-20).

The adverse impact of development project also lay on the environment. Environmental issues exist, including water and air pollution, waste disposal, preservation of nature (Kwak et al 2002: 301). In recent years, large-scale development projects have been implemented without proper scientific attention (environmental impact assessment) to the consequences of the resulting destruction of valuable natural resources and environmental degradation. Development activities and environmental quality are negatively correlated. The planet faces an unprecedented environmental crisis resulting from multiple interacting factors, including climate change, natural resource degradation, and tropical deforestation, etc (Athayde and Silva 2018: 666). With rapid population growth and consequent centralization of the development process, pressure on land resources has increased and subsequently increases in contributing to changes in environmental quality (Barau 1967: 2). Social

and consumer preferences have recently altered housing choices, mainly average per capita living space and housing location (Fischer et al 2013: 800; Enshassi et al. 2015: 234-54.).The conversion of land from agriculture to housing and infrastructure purposes is a loss of biodiversity leading to disaster as we seen in various states of India in terms of unprecedented flood, drought and water logging etc. Hence, policymakers should evaluate and give attention to valuation of natural resources in the impact assessment analysis before giving permission to any development project.

With these evidences, present chapter examines the impoverishment risk and environmental quality in the surveyed village due to the development projects. The chapter is divided into three sections. Section 1 briefly, highlights are various risks that pertain due to displacement by reviewed highly-cited literature published internationally recognized journals. Section 2 captures the perception of sample households on environmental quality and risk occurred due to displacement, while Section 3 uses binary logistic regression tool and socioeconomic data to identify determinants of impoverishment risk in the study area.

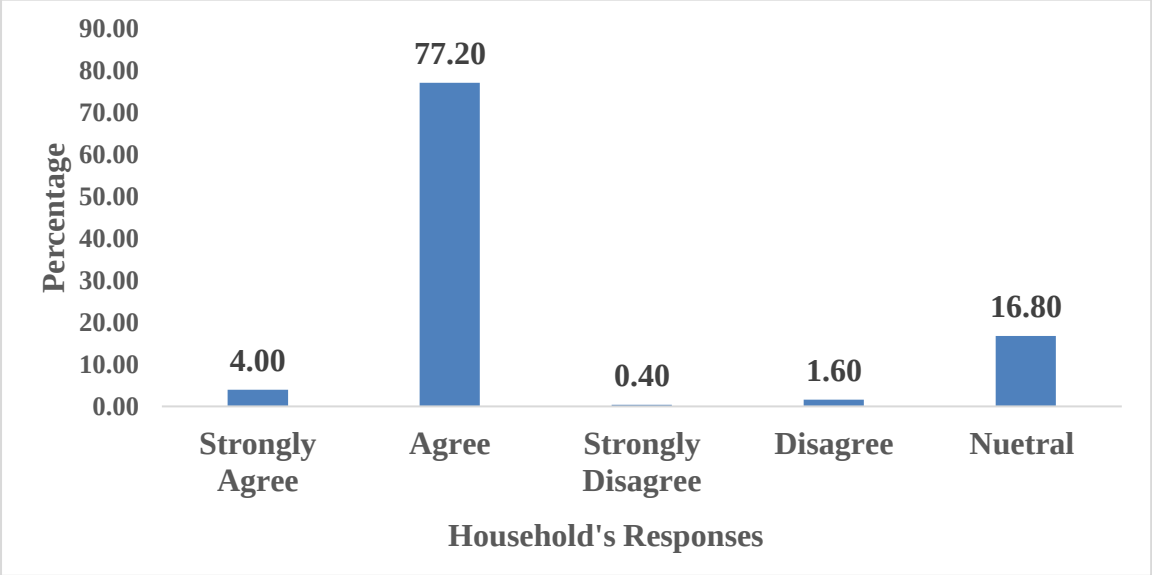
6.1 Households' perception on Environmental Quality

6.1.1 Change in Temperature

The development process can damage natural resources and will lower environmental quality, which leads to an increase in temperature (Tran and Shaw 2007: 271; Barau 1967: 2; Van Kamp et al 2003: 5; Dixon et al 2013: 1-6). Figure 6.2 captures households' perception of change in temperature. It is observed that nearly 80 percent of the households are agreed that temperature has been increased in the sample villages after starting of development projects, while 16.80 percent of respondents are neither agreed nor disagreed with the increase in temperature. Respondents also

revealed that there were varieties of trees and having their own ecological diversity in the villages, but after starting of the development projects, the majority of trees were cut to clear land for housing infrastructure and other purposes. They also believed that cutting off the tree has the main reason for the increase in temperature.

Figure 6.2: Changes in Temperature



Source: Field Survey Data, 2019. Note: figures are in percent.

6.1.2 Pollution Levels and Incidents of Heat Waves

Responses to various pollution levels have also been captured. For better understanding, responses are classified into five categories viz., low, very low, moderate, high, and very high. Table 6.1 revealed that more than 65 percent of households are perceived that the air pollution is highly increased after starting development projects in the surveyed villages, while only 12.80 percent of households are perceived that air pollution is moderately increased.

Further, 36.80 percent of households perceived that incident of heat waves are moderately increased, while 28.80 percent of households perceived that the intensity

of heat waves is relatively very high after starting development projects. This is increasing both morbidity and mortality in the sample villages.

Likewise, 86.40 percent of households perceived that dust pollution is very high due to the movement of traffic, while only 2.40 percent of households perceived that dust pollution is relatively low as compared to the pre-development period.

Lastly, 71.60 percent of households perceived that noise pollution is relatively very high in the sample villages as compared with the pre-development period, while only 1.60 percent of households perceived that noise pollution is relatively low. In totality, the majority of households perceived that development projects are not only ecologically unsustainable but also causing serious health issues.

Table 6.1: Perception on Pollution and Heat Waves

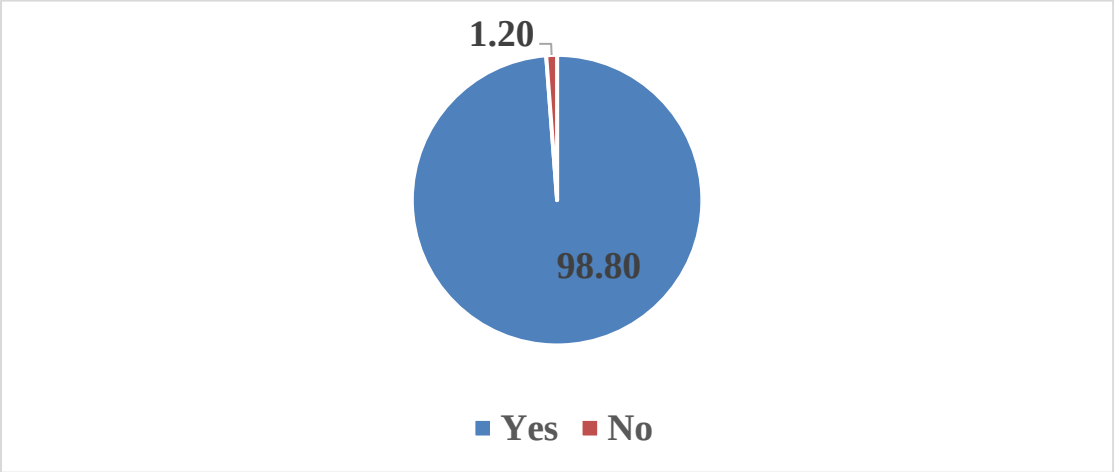
Households' Perception	Low	Very Low	Moderate	High	Very High
Increase in Air Pollution	1.60	0.80	12.80	19.20	65.60
Increase in heat waves incidents	1.60	0.40	36.80	32.40	28.80
Increase in Dust Pollution	2.40	1.20	2.80	7.20	86.40
Increase in Noise Pollution	1.60	0.80	9.20	16.80	71.60

Source: Field Survey Data, 2019. Note: values are in percent.

6.1.3 Impact on Water Quality

The source and distribution of pollutants determines the direct impact on water quality after storing water, changes in water quality in reservoirs. This section includes the perception of respondents on environmental quality near shifted and land acquisition villages. Because of sample villages are closely attached to construction sites. Hence, people are facing water quality problems in terms of smell-water, and watercolor (yellow, red, and dusty water). Fig. 6.3 shows that 98.80 percent of households perceived that water quality has been declined, while 1.20 percent of households perceived that there is no change in water quality after starting development projects in the area.

Figure 6.3: Impact on Water Quality



Source: Field Survey Data, 2019. Note: values are in percent.

6.1.4 Socioeconomic Status of Sample Villages

Table 6.2 depicts the socioeconomic characteristics of sample households. Questions were asked to the surveyed households on landlessness, joblessness, homelessness, and food, health & educational insecurity to access the livelihood vulnerability. Results from Table 6.2 reveal that more than 80 percent of households responded that they become highly vulnerable after land acquisition. Further, households are in majority food, education, and health insures living with limited resources.

Village level analysis reveals that households belonging to Ghuswalkalan (i.e., 54.55 percent) have highest working as a daily wage worker, while lowest in Matti village (i.e., 7.41 percent). Half of the population is illiterate living in the nuclear family system in the sample villages[3]. More than 70 percent of households are having more than five family members in the family. Further, it is observed that 100 percent of the land was acquired from Ghuswalkalan village, while only 3.33 percent of the land was acquired from Matti village.

Before the land acquisition, the majority of households have more than one acre of fertile agricultural land with a monthly income above 30, 000. The majority of

[3]Note: more than five members in the family is categorized nuclear family.

households are young having a mean age of 28.45 years. Majority of the households are unaware of the land acquisition act. In the Matti village highest households having a ration card (i.e., 90 percent), while the lowest in New Garura village (i.e., 58.95 percent). Further, households belonging to the Ghuswalkalan and Yusuf Nagar are the highest (i.e., 71.11 percent) living below poverty line than households belonging to the Matti and New Garura villages.

Likewise, about 75.53 percent of households are perceived that health cost has been increased after land acquisition. Village level analysis shows that households belonging to the Ghuswalkalan and Yusuf Nagar villages are the highest (i.e., 100 percent) perceived that health cost has increased, while lowest in Matti village (i.e., 40 percent).

Moreover, only 4.87 percent of households are living less than five kilometers from the medical facilities, which vary from 9.47 percent in New Garura village to 10 percent in Matti village. On an average 18.84 percent of households are only received compensation for land, which varies from 20.63 percent in Yusuf Nagar village to 30.53 percent in New Garura village as per the land acquisition act. Lastly, only 13.91 percent of households are living within the 2-5 kilometer radius of educational centers.

From Table 6.2, the following inferences can be drawn. First, surveyed households are having limited access to basic amenities, which vary from village to village and household to household. Second, the majority of households are highly vulnerable (more than 80 percent). Third, the majority of households unaware of the land acquisition process and didn't get compensation as per the law. Fourth, more than 70 percent of households after land acquisition are living below the poverty line

having food insecurity. Lastly, the highest distance from the medical centers with an increase in health expenditure has becoming households to health insecure.

Table 6.2: Socioeconomic Characteristics of the Sample Villages

Variables	Matti	New Garura	Ghuswalkalan	Yusuf Nagar	Overall
Landless	80.00	82.11	91.94	92.06	86.53
Joblessness	80.00	95.79	85.48	90.48	87.94
Homelessness	91.44	92.06	23.33	52.63	64.99
Food Insecurity	93.33	90.53	80.65	90.48	88.75
Health Insecurity	60.00	65.26	93.55	98.41	79.31
Educational Insecurity	56.67	61.05	66.13	73.02	64.22
Daily Wage Workers	7.41	28.00	41.18	54.55	32.79
Illiterate	66.67	50.33	51.00	52.38	55.15
HHs living under Nuclear Family system	76.67	77.89	75.81	90.48	80.21
HHs land has acquired	3.33	3.16	100.00	98.41	51.23
HHs having >5 members	70.00	58.95	59.68	61.90	62.63
HHs having >1 acre	85.19	87.37	77.42	63.49	78.37
HHs having income > 30, 000	83.33	69.47	85.48	87.30	81.40
HHs having Insufficient Income for finding job	33.33	35.79	24.19	6.35	24.92
Age of HHs	26.67	26.32	30.65	30.16	28.45
HHs are aware of Land Acquisition Act	3.33	0.00	0.00	0.00	0.83
HHs having Ration Card	90.00	58.95	61.29	69.84	70.02
HHs having below poverty line (BPL) card	56.67	47.54	71.79	71.11	61.78
Per acre production having > 500 kilogram	70.00	77.78	72.40	74.62	73.70
HHs perceived that health cost has increased	40.00	62.11	100.00	100.00	75.53
HHs are living 0-5 kilometer distance from medical facility	10.00	9.47	0.00	0.00	4.87
HHs perceived that they received compensation of land	0.00	30.53	24.19	20.63	18.84
HHs are living 2-5 kilometer from the education centres	16.67	38.95	0.00	0.00	13.91

Source: Field Survey Data, 2019. Note: HHs, households, values are in percent.

6.2: Factors Impacting Impoverishment Risk

Several factors are affecting the displaced families to make them more impoverished. The present study employed logistic regression based on Cernea's (2000: 3660-63)

model associated with different risks viz., homelessness, joblessness, landlessness, food security, health and education. Explanatory variables such as educational qualification, income, occupation, distance of the educational institution, type of land, compensation of land, livestock status, yield status, electricity, drinking water, cooking, consumption pattern, food intake (daily green vegetables, milk etc.), ration card, type of ration card, distance of the hospital, fees charges are used to capture impoverishment risk of displaced families.

6.2.1 Logistic Regression and Results

Logistic regression is used separately for each variable under impoverishment risk. The function of logistic regression is as follows.

$$L_i = In\frac{P_i}{1-P_i} = \alpha_i + \beta_i X_1 + e_i \ldots\ldots\ldots\ldots\ldots\ldots(1)$$

Wherein, L_i = dependent variable based on binary type (0,1), X_i = this is a matrix of the independent or explanatory variables (Table 6.3), B_i = coefficient of unknown parameter, and e_i = is the error term.

Table 6.3: Description of the dependent and independent variables

Dependent Variable	Description
Landless	Yes = 1, No = 0
Joblessness	Yes = 1, No = 0
Homelessness	Yes = 1, No = 0
Food Insecurity	Yes = 1, No = 0
Health Insecurity	Yes = 1, No = 0
Educational Insecurity	Yes = 1, No = 0
Independent Variables	
Occupation	Daily Wage Labour = 1, Others = 0
Education	Illiterate = 1, Others = 0
Nature of Family	Nuclear =1, Joint = 0
Type of Acquired Land	Agricultural Land =1, Others = 0
Family size	> 5 Members = 1, Others =0
Size of Acquired Land	> 1 acres = 1, Others = 0
Income	> 30,000 = 1, Others = 0

Age	21-40 =1, Others = 0
PPAwareness of Land Acquisition Act	Yes = 1, No = 0
Ration Card	Yes = 1, No = 0
Type of Ration Card	BPL= 1, APL= 0
Total Quantity of Crops Production	>500kg =1, Others = 0
Health Cost Increased	Yes= 1, No= 0
Hospital Facility	21-40 = 1, Others = 0
Fees Charge	Medium Charge= 1, Others = 0
Compensation of Land	Partial Compensation =1, Others = 0
Distance of Education Centres	2-5 km = 1, Others = 0

Source: Field Survey Data, 2019

6.2.2 Determinants of Livelihood Insecurity

The present study uses field survey data to identify the determinants of livelihood insecurity causes due to displacement. Socioeconomic and demographic data were hypothesizing with a binary logistic regression model. The method is best to predict the probability that a household' livelihoods are insecure due to displacement. The study identified 19 major determinants. Table 6.4 shows the estimated parameters of the empirical binary logit model. The regression classification table 6.4 indicated that the binary logit regression model predicted about 80 percent of the responses correctly. The model fits the data at ($p<0.001$) as indicated by the chi-square (Prob>chi^2) goodness of fit statistics. The goodness of fit demonstrated that the variables captured in this study were valid. It explains the factor that determines the impact of displacement. Study results also reject the null hypothesis and accept the alternative hypothesis stating a significant relationship between the capture variables and livelihood insecurity.

The regression results for landless show that household belonging to the nuclear family which land is acquired is more likely to be landless and unable to purchase land elsewhere (Table 6.4). The calculated odd ratio reveals that there is

3.57& 29.77 times higher probability that the household would be landless if he/she belonging to a nuclear family and his/her fertile agricultural land is acquired.

Further, the regression results for joblessness show that if households having agricultural land less than one acre and having insufficient income to find a job is more likely jobless and on the other, households working as a daily wage worker are less likely jobless. The calculated odd ratio reveals that there is 8.49 & 21.35 times higher probability that the households would be jobless if agricultural land acquired and households having insufficient income to find a job (Table 6.4).

The regression results for homelessness show that illiterate landless households are more likely homeless than that of educated households. The calculated odd ratio reveals that there is 3.68 & 16.22 times higher probability that an illiterate and landless household would be homeless (Table 6.4).

The regression results for food insecurity show that a households working as daily wage worker whose more than one-acre land acquired and belonging to the below poverty line are more likely face food insecurity than others. The calculated odd ratio reveals that there is 3.28 times higher probability that the households would be food insecure, if the households working as daily wage worker. Further, there is 2.78 &3.69 times higher probability that households would be food insecure, if the household's more than one-acre land is acquired and living under below poverty line (Table 6.4).

The regression results for health insecurity show that households whose health cost increased are more likely health insecure than that of others. The calculated odd ratio reveals that there is 8.16 times higher probability that the households would be health insecure, if health cost increased (Table 6.4).

The regression results for educational insecurity show that households living in the nuclear family system, having more than 30, 000 and living 2-5 kilometers distance from educational institutions are more likely educationally insecure. The calculated odd ratio shows that there is 4.26 times higher probability that the households would be educationally insecure if households living nuclear family system. Further, there is 9.37 & 3.98 times higher probability that the households would be educationally insecure if the household's income is more than 30, 000 and living 2-5 kilometers distance from educational institutions than that of others (Table 6.4).

Table 6.4: Determinants of displacement

Independent variable	Landlessness	Joblessness	Homelessness	Food Insecurity	Health Insecurity	Educational Insecurity
Occupation	0.69^{NS} (2.01)	-2.57** (0.07)	-	1.18* (3.28)	1.19^{NS} (3.31)	-0.11^{NS} (0.89)
Education	0.24^{NS} (1.27)	0.38^{NS} (1.46)	1.30*** (3.68)	1.49** (0.22)	-0.22^{NS} (0.79)	-
Nature of Family	1.27** (3.57)	0.83^{NS} (2.30)	-	-	-	1.45*** (4.26)
Type of Acquired Land	3.39*** (29.77)	-	-	-	-	-
Family size	0.86^{NS} (2.37)	-	-	-	-	-
Size of Acquired Land	0.84^{NS} (2.32)	2.13* (8.49)	-0.73* (0.48)	1.02** (2.78)	-	0.31^{NS} (1.37)
Income	-0.98^{NS} (0.37)	-	-	-	0.42^{NS} (1.52)	5.72*** (9.37)
Insufficient Income for Finding Job	-	3.06*** (21.35)	-	-	-	-
Age	-	1.13^{NS} (3.10)	-	-	-	-
Increased Landlessness	-	-	2.780*** (16.22)	-	-	-
Awareness of Land Acquisition Act	-	-	-0.48NS (0.61)	-	-	-
Ration Card	-	-	-	-1.55^{NS} (0.21)	-	-
Type of ration card			-	1.37*** (3.69)	-	-
Total Quantity of	-	-	-	-1.26***	-	-

Crops Production				(0.28)		
Health Cost Increased	-	-	-	-	2.10*** (8.16)	-
Hospital Facility	-	-	-	-	-1.09^{NS} (0.33)	-
Fees Charge	-	-	-	-	1.29** (3.64)	-
Compensation of Land	-	-	-	-	-	0.26^{NS} (1.30)
Distance of Education Centres	-	-	-	-	-	1.38** (3.98)
Constant	-0.11*** (0.89)	-0.37* (0.68)	-1.06* (0.34)	1.48^{NS} (4.41)	-0.44^{NS} (0.63)	-5.44*** (0.00)
Log-Likelihood	-44.53	-36.67	-118.89	-61.73	-83.56	-75.74
Number of Observation	250	250	250	250	250	250
Prob>chi^2	0.001	0.00	0.001	0.00	0.001	0.00
LR chi2 (7)	32.88	33.98	46.92	31.33	39.36	110.39
Pseudo R^2	0.76	0.82	0.80	0.83	0.78	0.81

Source: Field Survey Data, 2019. Note *, **, and *** indicate 1, 5, 10 percent level of significance, respectively, and NS indicates non-significant. Values in parentheses are odd ratios.

6.3 Conclusion

The debate on the do we achieve infinite growth with finite resources is a long history. As the population is growing rapidly, we needed resources to feed, accommodate, and provide a dignified living standard. In order to do this, we have limited natural resources and land is one of them. Land is a foremost resource for urban development planning, hence, we as policymakers have changes the land-use patterns from agriculture to commercial use. By this, we accommodate the ever-growing urban population. This creates serious consequences in the rural or semi-urban areas where land is acquired. After the land acquisition, the majority of the households whose land is acquired become landless, homeless, jobless, and food insecure. Because their main source of income was farming, and they don't have land now. They are unable to do any other job as they don't have the skills to work in

factories and to operate modern machines. This started a vicious cycle of poverty in which displacement is in the center. The present chapter examines the impoverishment risk and environmental quality in the surveyed village due to the development projects. Households' perception of change in temperature, heat waves, and various pollution also assessed using descriptive statistics, while determinants of various risks were identified using socioeconomic and demographic data collected from the four development affected villages.

The findings from this study reveal that the majority of households perceived that temperature is relatively increased after starting development project with higher heat waves intensity. It is reported by households that water is not fully recycled and discharged without treatment in the main water bodies resulted in decline in water quality.

Socioeconomic analysis of surveyed households revealed that the majority of households living below the poverty line with limited basic amenities. They are highly exposed, sensitive to development projects having insecure employment opportunities, unskilled to sustain their livelihoods in the urban settlements. Further, they also are unable to access medical facilities and community resources as they don’t have property rights.

In order to identify the determinants of various risks caused due to land acquisition (displacement), binary logistic regression results show that households are under risk, because they are illiterate, unskilled, living nuclear family system without social and economic support. They are unaware of land acquisition act, hence, hardly get compensation as per the law. With discriminated rehabilitation and compensation policy now affected households are relatively vulnerable than that of others.

With the above evidence, the present study suggests the following policy implications. First, there is an urgent need for skill training programs for project-affected people, so that they will survive in the new environment. Second, before acquiring land, there should be a clear-cut policy for timely compensation and rehabilitation of the affected population. Third, there is a need for dedicated poverty alleviation programs for the projected affected population, so that the poverty trap can be avoided. Fourth, at least minimum housing infrastructure should be provided to the project affected population nearby old settlements, so that the risk of homelessness can be avoided. Fifth, there are dedicated health and employment generation programs are in operation to deal with poverty, unemployment, malnutrition, hence, there should a dedicated health and employment program for the project affected populations so that risks of joblessness and food insecurity can be avoided.

Chapter 7

Major Findings, Conclusions and Policy Recommendation

7.0 Introduction

Displacement by development of projects is a virtual concern for human being in the globe. As population increases, the demand for development of projects also increases significantly. Ultimately this leads to land acquisition and displacement. In this context, the study has attempted to understand on the economic and social conditions, which are affected after displacement and land acquisition. Who are the main stakeholders who suffered the most? And, the answer is displaced and the land lost families. It always happens because development is a continuous process. Therefore, loss of land and inadequate compensation to the victim families are significant concern in the process development activities. Further, impoverishment risk and environmental quality decline are significant outcome due to development of projects.

Based on the above background, this study has carried out in Lucknow district, the capital city of Uttar Pradesh. The study used both secondary and primary data to examine the various objectives of the study. Secondary level data rom World Bank, NSSO, MOSPI and primary level data are obtained from villages to assess the livelihood vulnerability due to displacement and land acquisition families. Factor arising in the agriculture sector that contributes towards livelihood and food security issues are also discussed. Socio and economic condition of displaced families explored. Many significant factors which push the displaced families back, such as low level of education, low quality occupation, insignificant amount of income, ignorance on land acquisition policy, and social impact and environment impact assessment.

7.1 Major Findings

Chapter one of the study entitled **"Economic Development and Displacement: Issues and Challenges"** highlights that how development projects decline the natural resources base such as land, particularly through land acquisition and displacement in the process of economic development. It focuses on the issues and challenges of displacement. First, understand the displacement scenario in the economy, which leads the inequality and impoverishment risk in the displaced and land acquisition areas. Displacement consequences are livelihood problems, employment, income etc. Evidences based on review suggest that agriculture production decline particularly in the land acquisition area because of land size declines. Land acquisition act is not implemented strictly for the displaced households. However, there is serious deficiency in availability of consistent and macro based secondary level data on displacement.

Chapter two entitled "**Theoretical Linkages of Economic Development with the Induced Displacement"** deals with the background and impact of economic development on displacement. Development of projects are directly related to the welfare of society and economy as well. In this regard, literature are collected to find out the linkage of economic development with displacement. The first section explores how's development of economic activities activate economic growth and welfare of the society. Further, due to development of projects, over utilisation of natural resources like land, flora and fauna take place. Overpopulation and diminishing resources could lead to the forced displacement across countries. The second section is based on the linkages of economic growth theories and displacement. Rapid growth inevitably results in greater use of natural resources and emission of pollutants, which puts more pressure on the environment. It has a massive

impact on human beings and its effects on the environment. Displacement affects livelihood, income, education, etc. Displaced and land lost families face adverse impact of inequalities in societies. Unfortunately, this strategy does not sufficiently take into account the enormous suffering of the poor.

Chapter Three entitled **"Extent and Dimension of Displacement in Indian Context,"** reveal that massive displacement took place due to the development activities in India. The first section shows the displacement and resettlement insights and major funding agencies, monitoring and evaluation system in India. However, land acquisition causes displacement, which leads to impoverishment risk among displaced communities and land lost families. There are many categories of displacement but I have chosen the development induced displacement. NSSO migration round data shows that displacement and land acquisition increases over the years. For example, 44th round shows that development projects displaced 0.77 percent population; 49th round reflects that 0.06 and 0.09 percent displacement due to land and housing problems respectively; 55th round shows that 1.49 and 1.12 percent land acquisition and housing problem faced by displaced people. Similarly, 64th round highlighted that 0.32 percent of people were displaced due to development projects and 1.73 percent of people were suffering from the housing problem. These data show the large number of people displaced and large land acquisition took place by development of projects, which disturbed the human habitats. Moreover, the area under non-agricultural purposes has been increasing continuously in India during 1950 to 2016.

Chapter Four, entitled **"Socio-Economics Profile of Study Area"** explored the socio-economic condition of displaced or affected families in the study area of Lucknow district in Uttar Pradesh. First, it is observed that OBC is the dominant caste in the

study area followed by SC and General categories. Female category is dominated by the male category in education, occupation in the study area. Hindu religion (91.98 percent) is the highest and nuclear families (80 percent) is the dominant found in the sample villages. Because after getting the compensation, they are voluntarily going for separation. However, 55.90 percent of the sample households are illiterate, while 44.86 percent are literate in the sample. Majority of illiterate people is found in the Matti village (66.67 percent). The occupational pattern is unequal in the four villages and overall, 58.4 percent population are unemployed. At village level, Matti village have 73.33 percent highest unemployed people and lowest unemployed are in Yusuf Nagar village (42.86). So far as housing pattern is concerned, 94.32 percent have pukka houses, because those who get the compensation amount, they made pukka houses in the survey area. On the other hand, in the case of drinking water only 24.69 percent have access safe drinking water and 72.23 percent do not have access the safe water across four villages. Among them, New Garura village highest percentage of households used safe water. In sanitation, 98.38 percent people used latrine in the surveyed villages and 1.68 percent defecate in open field. The success rate in sanitation is very high because of Swachh Bharat Mission (SBM) implemented in the surveyed areas. Further, mean age of household found is 29.24. The mean income is Rs.12,004.4 and mean consumption is Rs. 20363.19. the consumption expenditure is high because people utilise their compensation amount.

Moreover, the analysis of before and after situation with few variables such as income and consumption reflect the following. Before displacement, the mean monthly income is Rs.29247.60 and after displacement it is Rs.20600.40, which is declined. But in the case of monthly mean consumption expenditure, before displacement it is Rs. 9336.39 and Rs.12557.93, which is increased by 34.81 percent.

The level of consumption increased because of compensation was used largely for conspicuous purposes rather than investing in sustainable source of income. Therefore, inequality found in economic and social status. However, before land acquisition, 42.6 percent people had trees, whereas after land acquisition, only 5.6 percent people had tress in the surrounding areas. Because most of tress were cut down due to the land acquisition process. Further, 34.72 percent people sold the woods privately and 37.72 percent of households surrendered to the company. As far as the compensation is concerned, 72.80 percent households got the compensation fully, 15,60 percent received partially, and 11.60 percent did not receive at all. In toto, 58.40 percent people expressed better living standard in terms of having house and basic amenities.

Chapter Five entitled **"Assessing of Livelihood Vulnerability Status of Sample Villages"** explored the impact of development projects on displaced households. Because large scale lands were converted for non-agricultural purposes. This chapter divided in four sections. The first section observed that development projects drastically changed the livelihood pattern of displaced families in terms of economic and social status.

Second section is based on agricultural situation pre and post displacement scenario. The agricultural status significantly declined by the land acquisition process in the surveyed villages. Out of acquired land, 52.20 percent was fertile agricultural land, while 17.20 percent was barren land and 31.60 percent was mix of both agriculture and barren land. There are three main crops grown in the sample villages viz., wheat, rice and mango. But after displacement, production of crops was declined in the survey villages. The highest wheat production declined in the Yusuf Nagar village (18.20 percent) and lowest declined in the Matti village (4.18 percent). Rice

production also highest declined in Yusuf Nagar village (17.66 percent) and lowest in Matti village (10.58 percent). Further mango production is lowest in Matti village village (11.54 percent) and highly lowest in Yusuf Nagar village 4.80 percent. So it could be said, that land acquisition adversely affected the crop production after displacement.

In the third section, the adequacy of basic needs such as foods and shelter availability is measured by using Livelihood Vulnerability Approach (LVA). By using LVA, various types of vulnerability are measured. Therefore, vulnerability is characterized as insecurity in the well-being of individuals, households, and communities in the face of changes in their external environment. So, Livelihood Vulnerability Index is measured by seven integrated components viz., socio-demographic condition, economic condition, social networking, health, food, natural capital and climate variability and pollution index in the sample villages.

In the socio-demographic features, vulnerability index that New Garura village has the lowest socio-demographic vulnerability (0.338), while Yusuf Nagar village has the highest vulnerability (0.391). Economic vulnerability index reveals that New Garura village has the lowest economic vulnerability (0.536), while Yusuf Nagar has the highest economic vulnerability (0.565). Social networking vulnerability index reveals that New Garura village has the highest vulnerability (i.e., 0.330), while Ghuswalkalan village has the lowest vulnerability (i.e., 0.311). Health vulnerability index reveals that New Garura (i.e., 0.096) has the highest health vulnerability, while Ghuswalkalan has the lowest vulnerability (i.e., 0.082). Food vulnerability indices reveal that Yusuf Nagar village has the highest food vulnerability (0.832), while lowest in Matti village (0.365). Natural capital vulnerability indices reveals that the Ghuswalkalan village has the highest vulnerability (i.e., 0.298) and lowest in Matti

village (i.e., 0.219). Climate and pollution vulnerability index shows that Ghuswalkalan (i.e., 0.343) has the highest vulnerability, while Matti (i.e. 0.304) has the lowest vulnerability.

Livelihood vulnerability index reveals that Yusuf Nagar village has the highest vulnerability (0.404) among all villages. The cross-index analysis shows that the higher socio-demographic, economic and food vulnerabilities are the main contributing factors responsible for higher vulnerability of households belonging to Yusuf Nagar than that of other villages.

Chapter Six entitled **"Impoverishment Risk and Environmental Quality".** has explored the extent of impoverishment risk and decline in environmental quality in the surveyed villages. Few of the significant results are as follows based on the perception people in the surveyed villages. First, 80 percent households agree that temperature has been increased, while 16.80 percent are neutral on change in temperature. Second, 65 percent people agreed on air pollution has highly increased. Third, perception on heatwaves has moderately increased by 36.80 percent and 28.80 percent said very high intensity of heat weaves. Four, majority of perception on dust pollution is 86.40 percent and 2.40 percent said duct pollution is low. Because New Garura , Ghuswalkalan and Yusufnager village are attached in the construction side where land acquired for the development purposes. 71.60 percent respondent said that noise pollution is very high, 1.60 percent respondent said low noise pollution in the surveyed area. Finally, 98.80 percent people facing water quality issues in the surveyed area.

Section three of this chapter shows the factor impacting impoverishment risk of displaced and land lost households. In this chapter Cernea's (2000) model

associated with different risks viz., homelessness, joblessness, landlessness, food insecurity, health and education insecurity are explored with the help of logistic regression. The results confirm that for landlessness who belongs to the nuclear family which land is acquired is more likely to be landless and unable to purchase land elsewhere. The calculated odd ratio reveals that there is 3.57 times higher probability that the household would be landless if he/she belongs to a nuclear family and his/her fertile agricultural land is acquired. Households having agricultural land less than one acre and having insufficient income to find a job is more likely to be jobless and on the other hand, households working as a daily wage worker are less likely to be jobless. The calculated odd ratio reveals that there is 8.49 times higher probability that the households would be jobless if household lose agricultural land. Likewise, homelessness show that illiterate landless households are more likely homeless than that of educated households. Odd ratio shows 3.68 times higher probability that an illiterate and landless household would be homeless compared to educated counterparts. Food insecurity show that a households working as daily wage worker whose lost more than one-acre land and belonging to the below poverty line are more likely face more food insecurity than others. The calculated odd ratio reveals that there is 3.28 times higher probability that the households would be food insecure, if the households main source of income is from a daily wage worker. Further, there is 2.78 times higher probability that households would be food insecure, if the household's lost more than one-acre land and living under below poverty line. Health insecurity show that households whose health cost increased are more likely health insecure than those of others. The calculated odd ratio reveals that there is 8.16 times higher probability that the households would be health insecure, if health cost increased. Educational insecurity show, having more than 30, 000 income and living

2-5 kilometers distance from educational institutions are more likely educationally insecure. The calculated odd ratio shows that there is 4.26 times higher probability that the households would be educationally insecure if households living in a nuclear family system. Further, there is 9.37 times higher probability that the households would be educationally insecure if the household's income is more than 30, 000 and living 2-5 kilometers distance from educational institutions than those of others.

7.2. Conclusions

Displacement and land acquisition creates imbalances in the socio-economic status of the displaced area. Agricultural issues such as decline in land size and total crop production are prominent in the surveyed villages. Due to non-availability of macro data on displacement in public domine creates severe problems on estimation of actual number victims households and corresponding compensation and rehabilitations packages. At the India level, agricultural land used for development of project purposes may be very dangerous in near future in the form food insecurity. As NSSO migration round data shows that land acquisition and displacement increase over the years causes huge concentration of population in urban areas and eventually creates large scale slum areas. The displaced families suffered more in terms of economically and socially. OBC is dominated class and compensation caused in increase the number of nuclear families after displacement. Educational status, occupation pattern and income level has been adversely affected due to displacement. Livelihood vulnerability index finds that social demographic index, economic index, and health index are more vulnerable segments after displacement. Try to minimise or more focus in these segments. However, sanitation level has increased because of government schemes. More people have pacca houses because after getting

compensation people purchased land or home. The socio-demographic, economic and food status are adversely affected after displacement and land acquisition.

7.3 Policy Recommendation

1. Displacement and land acquisition are complicated issue for the affected families. It is found that EIA and SIA were not properly conducted before land acquisition in the survey villages as more than 90 percent of respondents confirmed. So, in such areas before land acquisition conducted a monitoring committee, who collected the land acquired and displaced people in particular places to understand the importance the EIA and SIA and aware the displaced people how to cope with the situation.
2. As data shows, there has been increase in the use of land for non-agricultural purposes India over the years. Further, more than 60 percent agricultural land used for development of projects in the study areas during recent decades, hence there is need for minimising the acquisition of agricultural land and needs to be prompted for acquisition of non-productive or barren land for the development of projects.
3. The extent of flora has been declined due to development of various projects as majority people confirmed in the surveyed area. Therefore, there is special need for more plantation in the surrounding areas of the project and displacement as plantation would controls the environmental pollution.
4. After displacement, government should focus on to provide sustainable income source and better occupation through providing effecting training programmes and vocational courses to the youths of land lost and displaced households.

5. In the displaced areas, maintenance of drinking water quality and minimisation of environment pollution are essential for health and livelihood.
6. Government should provide the good hospital facility, education facility, food supply in the displaced area. First For the displacement area or who lost his/her land in this case issue health cards, which could be reduced the health cost. Second, food insecured households do not get vegetables, milk and other nutrient food. There is not an adequate supply of ration for BPL cardholders. Maintain the food supply in the surveyed areas for affected families. The study found after displacement, women were less involved in the occupation. provide jobs in the displacement area.

Bibliography

Abbink, J. 2011. 'Land to the Foreigners: Economic, Legal, and Socio-Cultural Aspects of New Land Acquisition Schemes in Ethiopia', *Journal of Contemporary African Studies,* 29(4).

Abdullah, S. A. and Hezri, A. A. 2008. 'From Forest Landscape to Agricultural Landscape in the Developing Tropical Country of Malaysia: Pattern, Process, and their Significance on Policy', *Environmental Management,* 42(5).

Adam, A. B., Owen, J. R. and Kemp, D. 2015. 'Households, Livelihoods and Mining-Induced Displacement and Resettlement', *The Extractive Industries and Society,* 2(3).

Adger WN, Brooks N, Bentham G. and Agnew, M. 2004. 'New Indicators of Vulnerability and Adaptive Capacity'. Tyndall Centre for Climate Change Research, Norwich.

Adri, N. and Simon, D. 2018. 'A Tale of Two Groups: Focusing on the Differential Vulnerability of "Climate-Induced" and "Non-Climate-Induced" Migrants in Dhaka City', *Climate and Development,* 10(4).

Agrawal, A. and Redford, K. 2009. 'Conservation and Displacement: An Overview', *Conservation and Society,* 7(1).

Ahmed, G. B., Shariff, A. R. M., Balasundram, S. K. A Bin Abdullah, A. F. 2016. 'Agriculture Land Suitability Analysis Evaluation based Multi Criteria and GIS approach', In *IOP Conference Series: Earth and Environmental Science,*37(1).

Ahmed, V. 1988. 'Monitoring and Evaluating Development Projects', *Washington DC: The World Bank.*

Akbulut, B., Adaman, F. and Madra, Y. M. 2015. 'The Decimation and Displacement of Development Economics', *Development and Change,* 46(4).

Alias, A. and Nasir Daud, M. D. 2006. 'Payment of Adequate Compensation for Land Acquisition in Malaysia', *Pacific Rim Property Research Journal,* 12(3).

Alig, R. J. and Healy, R. G. 1987. 'Urban and Built-Up Land Area Changes in the United States: an Empirical Investigation of Determinants', *Land Economics,* 63(3).

Ambaye, G., & Abeliene, A. 2015. 'Development-Induced Displacement and its Impacts on the Livelihoods of Poor Urban Households in Bahir Dar, North Western Ethiopia', *African Human Mobility Review,* 1(3).

Anderson, R., English, R. and Brusberg, E. 2002. Handbook for Preparing a Resettlement Action Plan. *Washington, DC,* The International Finance Corporation (IFC).

Asif, M. 1999. 'Land Acquisition Act: Need for an Alternative Paradigm', *Economic and Political Weekly,* 34(25).

Asif, M. 2000. 'Why Displaced Persons Reject Project Resettlement Colonies', *Economic and Political Weekly,* 35(24).

Athayde, S. and Silva-Lugo, J. 2018. 'Adaptive Strategies to Displacement and Environmental Change among the Kaiabi Indigenous People of the Brazilian Amazon', *Society & Natural Resources*, 31(6).

Axinn, W. G., Clarkberg, M. E. and Thornton, A. 1994. 'Family Influences on Family Size Preferences', *Demography*, 31(1).

Bamberger, M., and Cheema, S. 1990. *Case Studies of Project Sustainability: Implications for Policy and Operations from Asian Experience*. The World Bank.

Bank Off, G., Frerks, G. and Hilhorst, D. 2004. '*Mapping Vulnerability: Disasters Development and People',* Earthscan, London.

Barau, A. S. 1967. 'Land Degradation and Environmental Quality Decline in Urban Kano', *Kano: The State, Society and Economy*.

Barker, A., and Wood, C. 1999. 'An Evaluation of EIA System Performance in Eight EU Countries', *Environmental Impact Assessment Review*, 19(4).

Bartolome, L. J., De Wet, C., Mander, H. and Nagraj, V. K. 1999. *Displacement, Resettlement, Rehabilitation, Reparation and Development*. World Commission on Dams.

Baviskar, A. 1995. 'Discussion: The Political Uses of Sociology: Tribes and the Sardar Sarovar Project', *Sociological Bulletin, 44*(1).

Becker, D. R., Harris, C. C., McLaughlin, W. J. and Nielsen, E. A. 2003. 'A Participatory Approach to Social Impact Assessment: the Interactive Community Forum', *Environmental Impact Assessment Review*, 23(3).

Becker, H. A. 2001. 'Social Impact Assessment', *European Journal of Operational Research*, 128(2).

Bhagat, R. B. 2011. 'Urbanisation and Access to Basic Amenities in India', *Urban India, 31*(1).

Bhatia, R. and Wernham, A. 2008. 'Integrating Human Health into Environmental Impact Assessment: An Unrealized Opportunity for Environmental Health and Justice', *Environmental Health Perspectives*, 116(8).

Bhatt, V. V. 1965. 'Some Notes on Balanced and Unbalanced Growth', *The Economic Journal*, 75(297).

Bhattacharya, M. 2007. 'Nandigram and the Question of Development', *Economic and Political Weekly*, 42(21).

Bidner, C. and Eswaran, M. 2015. 'A gender-based theory of the origin of the caste system of India', *Journal of Development Economics,* 114.

Bimonte, S. and Stabile, A. 2017a. 'Land Consumption and Income in Italy: a Case of Inverted EKC', *Ecological Economics*, 13.

Bimonte, S. 2017b. 'EKC and the Income Elasticity Hypothesis Land for Housing or Land for Future', *Ecological Indicators,* 73.

B.K, Sharma and Nayak, J. K. 2016. 'Social Impact Assessment of a Displaced Village of Koraput District, Odisha, India', *Journal of Social Science and Humanities Research,* 1(11).

Black, R., Arnell, N. W., Adger, W. N., Thomas, D. and Geddes, A. 2013. 'Migration, Immobility and Displacement Outcomes Following Extreme Events', *Environmental Science & Policy,* 27(1).

Blume, L. and Rubinfeld, D. L. 1984. 'Compensation for takings: an Economic Analysis',. California Law Review, 72, 569.

Boche, M. and Anseeuw, W. 2013. 'Unraveling Land Grabbing -Different Models of Large-Scale Land Acquisition in Southern Africa', *The Land Deal Politics Initiative,* LDPI Working Paper 46.

Brand, L. A. 2001. 'Displacement for Development? The Impact of Changing State-Society Relations', *World Development,* 29(6).

Bilsborrow, R. E., & DeLargy, P. F. 1990. 'Land use, Migration, and Natural Resource Deterioration: The Experience of Guatemala and the Sudan', *Population and Development Review,* 16.

Canter, D. V. 1996. 'A Multiple Sorting Procedure for Studying Conceptual Systems. Dartmouth Publishing Company.

Cernea, M.M. 1999. 'Development Painful Social Costs', In S. Parasuraman (ed.), *The Development Dilemma*. London: Springer.

Cernea, M. 1997. 'The Risks and Reconstruction Model for Resettling Displaced Populations', *World Development,* 25(10).

Cernea, M. M. 1990. 'Internal Refugee Flows and Development-Induced Population Displacement', *Journal of Refugee Studies,* 3(4)

Cernea, M. M. 1995. 'Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge', *Journal of refugee studies,* 8(3).

Cernea, M. M. 1996a. 'Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge', In C. McDowell (ed.), *Understanding Impoverishment: The Consequences of Development-Induced Displacement* (13-32). RI and Oxford: Berghahn.

Cernea, M. M. 2000. 'Risks, 'Safeguards and Reconstruction: A Model for Population Displacement and Resettlement', *Economic and Political Weekly,* 35(41).

Cernea, M. M. 2003. 'For a New Economics of Resettlement: a Sociological Critique of the Compensation Principle', *International Social Science Journal*, 55(175).

Cernea, M. M. 2004. 'Impoverishment Risks, Risk Management, and Reconstruction: A Model of Population Displacement and Resettlement', In *UN Symposium on Hydropower and Sustainable Development,* Beijing, 1-61.

Cernea, M. M. 2008. 'Compensation and Benefit Sharing: Why Resettlement Policies and Practices must be Reformed', *Water Science and Engineering,* 1(1).

Cernea, M. M. and Mundial, B. 1993. 'The Urban Environment and Population Relocation', *World Bank,* 152.

Cernea, M. M., and Schmidt-Soltau, K. 2003. 'The end of Forcible Displacements? Conservation must not Impoverish People', *Policy Matters,* 12.

Chahar, S. S. and Gangal, V. K. 2017. 'Growth Empirics of Public Private Partnership Model in Infrastructural Development of Roads in Uttar Pradesh', *Global Journal of Enterprise Information System,* 9(4).

Chakravorty, S. 2014. 'The Price of Land: Acquisition, Conflict and Consequence', *Indian Journal of Agricultural Economics,* 69(4).

Chakravorty, S. 2016. 'Land Acquisition in India: The Political-Economy of Changing the Law', *Area Development and Policy*, 1(1).

Chambers, R. 1969. *Settlement Schemes in Tropical Africa: A Study of Organisations and Development*. International Library of Sociology and Social Reconstruction, London: Rutledge

Chambers, R. 1970.*The Volta Resettlement Experience. London*. London: Pall Mall Press.

Chambers, R. 2003a. *Settlement Schemes in Tropical Africa: a Study of Organisations and Development*, US: Taylor & Francis.

Cernea, M. M., and Schmidt-Soltau, K. 2003b. 'The end of Forcible Displacements? Conservation must not Impoverish People', *Policy Matters,* 12.

Chambers, R. and G. Conway. 1992. Sustainable Rural Livelihoods: Practical concepts for the 21st century. IDS discussion paper, 296.

Cheng, Z., Ke, Y., Yang, Z., Cai, J. ans Wang, H. 2020. 'Diversification or Convergence', *Engineering, Construction and Architectural Management,* 26(6).

Chou, J. S., Chen, H. M., Hou, C. C. and Lin, C. W. 2010. 'Visualized EVM System for Assessing Project Performance', *Automation in Construction, 19*(5).

Christensen, A. and Harild, N. 2009. 'Forced Displacement: The Development Challenge', *World Bank,* 63892:4.

Chu, C. C. 1997. 'Population Density and Infrastructure Development', *Review of Development Economics,* 1(3).

Crisp, J., Morris, T. and Refstie, H. 2012. 'Displacement in Urban Areas: New Challenges', New Partnerships', *Disasters,* 36.

Census, 2011. *District Handbook*, Office of the Registrar General & Census Commissioner, India, Ministry of Home Affairs, Government of India.

De Wet, C. 1988. 'Stress and Environmental Change in the Analysis of Community Relocation', *Human Organization*, 47(2).

De Wet, C. 2001. 'Economic Development and Population Displacement: Can Everybody Win?', *Economic and Political Weekly*, 36(50).

Doyen, J. H. 1974. *Population policies and economic development*. The World Bank.

GoI, 2017. *Annual Report 2016-2017*. Department of School Education & Literacy, Ministry of Human Resource Development, Government of India.

Dhagamwar, V., De, S. and Verma, N. 2003. *Industrial Development and Displacement: The People of Korba*. India: SAGE Publications.

Dixon, J. A., Carpenter, R. A., Fallon, L. A., Sherman, P. B. and Manipomoke, S. 2013. *Economic Analysis of the Environmental Impacts of Development Projects*. Rutledge.

Dooms, M., Haezendonck, E. and Verbeke, A. 2015. 'Towards a Meta-Analysis and Toolkit for Port-related Socio-Economic Impacts: A Review of Socio-Economic Impact Studies Conducted for Seaports', *Maritime Policy & Management,* 42(5).

Dougherty, T. C. and Hall, A. W. 1995. *Environmental Impact Assessment of Irrigation and Drainage Projects*. Food & Agriculture Organization of the United Nations.

Downing, T. E. 1996. 'Mitigating Social Impoverishment When People are Involuntarily Displaced', In C. McDowell (ed.), *Understanding Impoverishment: The Consequences of Development-Induced Displacement* (33-48). Oxford: Berghahn.

Downing, T. E. 2002. *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*. London: International Institute for Environment and Development and World Business Council for Sustainable Development.

Dwivedi, R. 2002. 'Models and Methods in Development-Induced Displacement', *Development and Change,* 33(4).

De Wet, C. 1988. 'Stress and Environmental Change in the Analysis of Community Relocation', *Human Organization,* 47(2).

Eakin, H. and Bojórquez-Tapia, L. A. 2008. 'Insights into the Composition of Household Vulnerability from Multi-criteria Decision Analysis', *Global Environmental Change*, 18(1).

Eakin, H. and Luers, L. 2006. 'Assessing the Vulnerability of Social-Environment Systems', *Annual Review of Environment of Resources,* 31.

Enshassi, A., Kochendoerfer, B. and Rizq, E. 2015. 'An Evaluation of Environmental Impacts of Construction Projects', *RevistaIngeniería De Construcción, 29*(3).

Eriksen, S. H. and Kelly, P. M. 2007. 'Developing Credible Vulnerability Indicators for Climate Adaptation Policy Assessment', *Mitigation and Adaptation Strategies for Global Change,* 12(4).

Easterlin, R. A. 1967. 'Effects of Population Growth on the Economic Development of Developing Countries', *The Annals of the American Academy of Political and Social Science,* 369(1).

Fernandes, W. 1998. 'Land Acquisition (Amendment) Bill, 1998: Rights of Project-Affected People Ignored', *Economic and Political Weekly,* 33(42/43).

Fernandes, W. 2004. 'Rehabilitation Policy for the Displaced', *Economic and Political Weekly,* 39(12).

Fischer, B. Klauer, B. and Schiller, J. 2013. 'Prospects for Sustainable Land-Use Policy in Germany: Experimenting with a Sustainability heuristic', *Ecological Economics,* 95.

Fox, A. D., Desholm, M., Kahlert, J., Christensen, T. K. and Krag Petersen, I. B. 2006. 'Information Needs to Support Environmental Impact Assessment of the Effects of European Marine Offshore Wind Farms on Birds', *International Journal of avian Science,* 148.

Galipeau, B. A., Ingman, M. and Tilt, B. 2013. 'Dam-induced displacement and agricultural livelihoods in China's Mekong Basin', *Human Ecology,* 41(3).

Galor, O. and Zeira, J. 1993. 'Income Distribution and Macroeconomics', *The Rreview of Economic Studies,* 60(1).

Gardner, B. D. 1977. 'The Economics of Agricultural Land Preservation', *American Journal of Agricultural Economics,* 59(5).

Gemenne, F. and Brücker, P. 2015. 'From the Guiding Principles on Internal Displacement to the Nansen Initiative: What the Governance of Environmental Migration can learn from the Governance of Internal Displacement', *International Journal of Refugee Law,* 27(2).

German, L., Schoneveld, G. and Mwangi, E. 2011. 'Processes of Large-Scale Land Acquisition by Investors: Case Studies from Sub-Saharan Africa', In *International Conference on Global Land Grabbing*, University of Sussex.

Ghatak, M. Mitra, S. Mookherjee, D. and Nath, A. 2013. 'Land Acquisition and Compensation: What Really Happened in Singur?', *Economic and Political Weekly,* 48(21).

GoI. 2019. 'Annual Report 2018-2019, Department of Drinking Water & Sanitation, Ministry of Jal Shakti, Government of India, New Delhi.

Gong, Y., Yao, K., Zhang, R., Liu, B., and Wang, F. 2020. 'Rethinking Livelihood Resilience After Development-Induced Displacement and Resettlement: A Case Study of Qianping Reservoir', *International Journal of Water Resources Development*, 1-24.

Hahn, B. M., Riederer. M. A. and Foster, O. S. 2009. 'The Livelihood Vulnerability Index: A Pragmatic Approach to Assessing Risks from Climate Variability and Change- A Case Study in Mozambique', *Global Environmental change*, 19.

Halsnas, K. and S. Trarup, S. 2009. 'Development and Climate Change: AMainstreaming Approach for Assessing Economic, Social, and Environmental Impacts of Adaptation Measures', *Environmental Management*, 43(5).

Harris, J. R., and Todaro, M. P. 1970. 'Migration, Unemployment and Development: ATwo-Sector Analysis', *The American Economic Review*, 60(1).

Hasan, I., Milton, S., Md. Sirajul, I. K., Md. Solayman, Md. Himayun K. 2018. 'Environmental Impact Assessment: Integrated Evaluation of Bridge Construction Project in Bangladesh', *International Journal of Advanced Geosciences, 6*(1).

Henisz, W. J. 2000. 'The Institutional Environment for Economic Growth', *Economics & Politics*, 12(1).

Hightower, W. M. 2003. 'The Boy Turn in Research on Gender and Education', *Review of Educational Research,* 73 (4).

Ho, S. P. and Lin, G. C. 2004. 'Non-Agricultural Land Use in Post-Reform China', *The China Quarterly*, (179).

Hoda, A. 2018. 'Land use and Land Acquisition Laws in India', *Indian Council for Research on International Economic Relations,* 361.

Horowitz, M. M. and Salem-Murdock, M. 1993. 'Development-Induced Food Insecurity in the Middle Senegal Valle', *Geo Journal*, 30(2).

House, Q. E. 2007. 'Environmentally Displaced People: Understanding the Linkages Between Environmental Change, Livelihoods and Forced Migration', Policy Briefing,*Refugee Studies Centre,* University of Oxford.

Heredia, C., Seymour, F., Bosshard, P., & Hunter, D. 2012. 'Lending Credibility: New Mandates and Partnerships for the World Bank', *World Bank,*1.

IDMC 2017. 'Internal Displacement by Country Database', Internal Displacement Monitoring Centre, Geneva.

IDMC 2018. *Global report on internal displacement'*, International Displacement Monitoring Centre, Geneva.

Iyengar, N. S. and Sudarshan, P. 1982. 'A Method of Classifying Regions from Multivariate data', *Economic and Political Weekly*, 17(51).

Jacob, B. A. 2002. 'Where the Boys aren't: Non-cognitive Skills, returns to School and the Gender Gap in Higher Education', *Economics of Education review*, 21(6).

Jawando, J. O. and Samuel, O. S. 2020. 'Urban Transformation and Development-Induced Displacement in the Informal Economy', *Journal of Sociological Research*, 11(1).

Jigoulov, V. 2016. 'Interpreting Exile: Displacement and Deportation in Biblical and Modern Context', *Journal of the American Oriental Society*, 136(3).

Jojo, B. and Beck, H. 2020. 'Tribes and Electoral Politics in Chhattisgarh: Alternative Sites of Assertion', In Jagannath, A. & Virginius, X. (eds.), *Handbook of Tribal Politics in India* (244). India: Sage Publication.

Kanango, S. D. 2004. 'Counseling Families Affected by Socio-Political Factors and Economic Hardships', *International Journal for the Advancement of Counseling*, 26(4).

Khatua, S. and Sharma, V. 2019. 'Short-Term Versus Long-Term Effects of Forced Displacement', in Yoshino, N., Paul S., (eds.), *Land Acquisition in Asia*, (25-38). Singapore: Palgrave Macmillan.

Koenig, D. 2009. 'Urban Relocation and Resettlement: Distinctive Problems, Distinctive Opportunities', Development and Dispossession: The Crisis of Forced Displacement and Resettlement, in large Satiroglu (ed.), *Development Induced Displacement and Resettlement: New Perspective on Persisting Problems*. London.

Kumar, A. 2014. 'Access to Basic Amenities: Aspects of Caste, Ethnicity and Poverty in Rural and Urban India-1993 to 2008–2009', *Journal of Land and Rural Studies*, 2(1).

Kumar, P. and Gupta, R. 2016. 'Preparing the PPP Phoenix to Fly: Redesigning Frameworks to Match Emerging Vistas', *Indian Journal of Public Administration*, 62(1).

Kumaran, K.P. 2013. 'Socio-Economic Impoverishment Risks in Displacement of Tribes under Polavaram Irrigation Project', *Journal of Rural Development*, 32 (1).

Kusiluka, M. M., Kongela, S., Kusiluka, M. A., Karimuribo, E. D. and Kusiluka, L. J. 2011. 'The negative impact of land acquisition on indigenous communities' livelihood and environment in Tanzania', *Habitat International*, 35(1).

Kwak, S. J., Yoo, S. H. and Shin, C. O. 2002. 'A Multi-attribute Index for Assessing Environmental Impacts of Regional Development Projects: A Case Study of Korea', *Environmental Management*, 29(2).

Larrain, Jorge. 2013. *Theories of Development: Capitalism, Colonialism and Dependency*. USA: Blackwell Publisher.

Li, C., Wang, M. and Song, Y. 2018. 'Vulnerability and Livelihood Restoration of Landless Households After Land Acquisition: Evidence from Peri-Urban China', *Habitat International*, 79.

Liao, P. J., Wang, P., Wang, Y. C. and Yip, C. K. 2020. 'To Stay or to Migrate? When Becker Meets Harris-Todaro', *National Bureau of Economic Research*, w27767.

Lucas, Jr, R. E. 2004. 'Life Earnings and Rural-Urban Migration', *Journal of Political Economy*, 112(S1).

Madhuri, Tewari, H. R., and Bhowmick, P. K. 2014. 'Livelihood Vulnerability Index Analysis: An Approach to Study Vulnerability in the Context of Bihar', *Journal of Disaster Risk Studies*, 6(1).

Mahalingam, A. and Vyas, A. 2011. Comparative Evaluation of Land Acquisition and Compensation Processes across the World. *Economic and Political Weekly*, 46(32).

Mahapatra, L. K. 1999. *Resettlement, Impoverishment, and Reconstruction in India: Development for the Deprived*. New Dehli, Vikas Publishing.

Maitra, S. 2009. 'Development Induced Displacement: Issues of Compensation and Resettlement-Experiences from the Narmada Valley and Sardar Sarovar project', *Japanese Journal of Political Science*, 10(2).

Maldonado, J. K. 2012. 'A New Path Forward: Researching and Reflecting on Forced Displacement and Resettlement: Report on the International Resettlement Conference, Economics, Social Justice, and Ethics in Development-Caused Involuntary Migration', *Journal of Refugee Studies*, 25(2).

Mallik, C. 2017. 'Land Dispossession and Livelihood Adaptation: Challenges, Opportunities and Strategies in Rajarhat and Singur', In Bandyopadhyay S., Torre A., Casaca P., Dentinho T. (eds.) Regional Cooperation in South Asia. Contemporary South Asian Studies. Springer, Cham.

Markey, J. P. and Parks, W. I. 1989. 'Occupational Change: Pursuing a Different Kind of Work', *Monthly Lab. Rev.*, 112 (9).

Marshall, R., Arts, J. and Morrison-Saunders, A. 2005. 'International Principles for Best Practice EIA Follow-Up', *Impact Assessment and Project Appraisal*, 23(3).

Mason, J.B., White, J.M., Heron, L., Carter, J., Wilkinson, C. and Spiegel, P. 2012. 'Child Acute Malnutrition and Mortality in Populations Affected by Displacement in the Horn of Africa, 1997-2009', *International Journal of Environmental Research and Public Health*, 9(3).

Mandishekwa, R. and Mutenheri, E. 2020. 'Mining-Induced Displacement and Resettlement: An analytical Review', *Ghana Journal of Development Studies*, *17*(1).

Mathis, K., and Steffen, A. D. 2015. 'From Rational Choice to Behavioural Economics. In *Theoretical Foundations, Empirical Findings and Legal Implication*, Springer Nature.

McCully, P. 1996. *Silenced Rivers: The Ecology and Politics of Large Dams*. Zed Books.

Mehta, L. and Srinivasan, B. 2000. 'Balancing Pains and Gains: A Perspective Paper on Gender and Large Dams', *Contributing Paper for WCD Thematic Review*, 1.

Michelman, F. I. 1966. Property, Utility, and Fairness: Comments on the Ethical Foundations of just Compensation Law. *Harvard Law Review, 80* (6)

Meyfroidt, P., Lambin, E. F., Erb, K. H. and Hertel, T. W. 2013. 'Globalization of Land use: Distant Drivers of Land Change and Geographic Displacement of Land use. *Current Opinion in Environmental Sustainability*, 5(5).

Mishra, B. 2010. 'Agriculture, Industry and Mining in Orissa in the Post-Liberalisation Era: An Inter-District and Inter-State Panel Analysis', *Economic and Political Weekly,* 45(20).

Modi, R. 2009. *Beyond Relocation: The Imperative of Sustainable Resettlement*. India: SAGE Publications.

Mohanty, M. 2007. 'Political Economy of Agrarian Transformation: Another view of Singur', *Economic and Political Weekly,* 42(9).

Mohanty, R. 2011. 'Impact of Development Project on the Displaced Tribals: A Case Study of a Development Project in Eastern India', *Orissa Review,* 48(2-3).

Muggah, R. 2000. 'Through the Developmentalist Looking Glass: Conflict-Induced Displacement and Involuntary Resettlement in Columbia', *Journal of Refugee Studies,*13(2).

Mukul. 1996. 'Building from Above, Displacing from Below: Land Development in Delhi', *Economic and Political Weekly,* 31(5).

Mutton, D. and Haque, C. E. 2004. 'Human Vulnerability, Dislocation and Resettlement: Adaptation Processes of River-Bank Erosion-Induced Displaces in Bangladesh', *Disasters,* 28(1).

Myeni, L., Moeletsi, M., Thavhana, M., Randela, M. and Mokoena, L. 2019. 'Barriers Affecting Sustainable Agricultural Productivity of Smallholder Farmers in the Eastern Free State of South Africa', *Sustainability* (Switzerland), 11 (11).

Mžavanadze, N. 2009. 'Sustainable Development in Lithuania: Between the Government Agenda and the Undiscovered Civil Society. *Journal of Baltic Studies, 40*(3).

Mikovits, C., Rauch, W., & Kleidorfer, M. 2014. 'Dynamics in Urban Development, Population Growth and their Influences on Urban Water Infrastructure', *Procedia Engineering*, 70.

McCully, P. 1996. *Silenced Rivers: The Ecology and Politics of Large Dams*. Zed Books.

Mikovits, C., Rauch, W., & Kleidorfer, M. 2018. 'Importance of Scenario Analysis in Urban Development for Urban Water Infrastructure Planning and Management', *Computers, Environment and Urban Systems*, 68.

Nabhi, U. S. 2006. 'Environmental Movements in India: An Assessment of their Impact on State and Non-State Actors', *India Quarterly,* 62(1).

Nagesha G. 2018. 'Public Provisioning of Infrastructure Changing Strategies: Empirics of India', In: Karnam G. (ed.) *Public Budgeting in India. India Studies in Business and Economics*. (203-220). New Delhi: Springer.

Nahvi, A., Daghighi, A. and Nazif, S. 2018. 'The Environmental Impact Assessment of Drainage Systems: A Case Study of the Karun River Sugarcane Development Project', *Archives of Agronomy and Soil Science*, 64(2).

Natalia, B. and Laura, R. 2017. 'Obtaining Representative Data on IDPs: Challenges and Recommendations', *UNHCR Statistical Technical Series,* Geneva, Switzerland.

Nathan, D. 2009. 'Social Security, Compensation and Reconstruction of Livelihoods', *Economic and Political Weekly,* 44(30).

Nelson, M. 2013. *The Development of Tropical Lands: Policy Issues in Latin America*. New York: Rutledge.

Nordhaus, W. D., Stavins, R. N. and Weitzman, M. L. 1992. 'Lethal Model 2: The Limits to Growth Revisited', *Brookings Papers on Economic Activity,* 1992(2): 1-59.

NSSO 2018. Household Social Consumption on Education in India, National Sample Survey Organisation. *Ministry of Statistics and Programme Implementation Government of India,* 585(75/25.2/1*).*

Obayelu, A. E. 2015. 'Transformation from Subsistence to Commercial Agriculture in Nigeria: The Effects of Large-Scale Land Acquisition on Smallholder Farmers', In *Handbook of Research on In-Country Determinants and Implications of Foreign Land Acquisitions* (409-431). IGI Global.

OECD, 1992. 'OECD Development Assistance Committee Guidelines for Aid and Environment; Aid Agencies on Involuntary Displacement and Resettlement in Development Projects', *OECD,* 3:6.

Ojo, S. O. 2008. 'Effects of Land Acquisition for Large Scale Farming on the Performance of Small-Scale Farming in Nigeria', *Journal of Human Ecology,* 24(1).

Oliver-Smith, Anthony. 1996. 'Fighting for a Place: The Policy Implications of Resistance to Development-Induced Resettlement', In C. McDowell (ed.), *Understanding Impoverishment: The consequences of development-induced displacement* (77-97). Oxford: Berghahn.

Onyebueke, V., Walker, J., Lipietz, B., Ujah, O. and Ibezim-Ohaeri, V. 2020. 'Urbanisation-Induced Displacements in Peri-Urban Areas: Clashes between Customary Tenure and Statutory Practices in Ugbo-Okonkwo Community in Enugu, Nigeria', *Land Use Policy*, 99.

Owen, J. R., Zhang, R. and Solar, A. A. 2020. 'On the Economics of Project-Induced Displacement: a Critique of the Externality Principle in Resource Development Projects', *Journal of Cleaner Production*, 276.

Panigrahi, S. K. 2018. 'Development, Displacement and Rehabilitation: Indispensably Inter-Related', *Journal of Humanities and Social Science*, 23(3).

Parasuraman, S. 1995. 'Development Projects and Displacement: Impact on Families', *Indian Journal of Social Work*, 31(24).

Parasuraman, S. 1996. 'Methodological Issues in Studies on Resettlement and Rehabilitation of Project Displaced People', Indian *Journal of Social Work*, 57.

Parasuraman, S. 2016. *The Development Dilemma: Displacement in India*. London: Palgrave Macmillan: London.

Patel, S., Celine d'Cruz, Burra, S. 2002. 'Beyond Evictions in a Global City: People-Managed Resettlement in Mumbai', *Environment and Urbanization*, 14(1).

Patil, N. A. and Laishram, B. 2016. 'Public-Private Partnerships from Sustainability Perspective- A Critical Analysis of the Indian Case', *International Journal of Construction Management*, 16(2).

Patil, V. and Ghosh, R. 2017, 'Rehabilitation Myths? How Transaction Costs Reduce Farmer Welfare After Land Acquisition', *Journal of South Asian Development*, 12 (1).

Pattnaik, P. K. 2013. 'Development Induced Displacement and Resettlement: Analysis of Judicial Policy. *Journal of the Indian Law Institute*, 55(3).

Petway, J.R. and Lin, Y.-P., Wunderlich, R.F. 2019. 'Analyzing Opinions on Sustainable Agriculture: Toward Increasing Farmer Knowledge of Organic Practices in Taiwan-YuanliTownship', *Sustainability* (Switzerland), 11(14).

Potter, A. 2016. *The Politics of Industrial Displacement: Evidence from Indian Special Economic Zones* (Doctoral Dissertation, New York University).

Potter, A. 2020. 'The Politics of Industrial Displacement: Evidence from Special Economic Zones', *The Journal of Politics*, 82(1).

Palit, C. 2004. 'Short-Changing the Displaced: National Rehabilitation Policy', *Economic and Political Weekly*, 39(27).

Quasem, M. A. 2011. Conversion of Agricultural Land to Non-Agricultural uses in Bangladesh: Extent and Determinants. *The Bangladesh Development Studies*, 34(1).

Ranjan, R. 2017, 'Unraveling the Narratives of Adivasi Dispossession: A Case Study of Land Acquisition in Nagri Village, Jharkhand', *Development*, 60 (3-4).

Rao, S. and Finnoff, K. 2015. 'Marriage Migration and Inequality in India 1983-2008', *Population and Development Review, 41*(3).

Ravindran, L. and Kumar, R. 2019. 'Development Induced Displacement: A Data Mining Approach towards Vulnerability and Impoverishment Risks', *International Journal of Development and Conflict*, 9(2).

Rawls, J. 1971. *A Theory of Justice. Cambridge*. MA: Harvard University Press.

Rew, A. Fisher, E. and Pandey, B. 2000. Addressing Policy Constraints and Improving Outcomes in Development-Induced Displacement and Resettlement Projects. Unpublished Report, *Refugee Studies Centre,* University of Oxford.

Robertson, B. and Pinstrup-Andersen, P. 2010. 'Global Land Acquisition: Neo-Colonialism or Development Opportunity?', Food Security, 2(3).

Robinson, J. 2002. *Development and Displacement*. Great Clarendon Street Oxford UK:Oxford University Press.

Robinson, W. C. 2003. Risks and Rights: The Causes, Consequences, and Challenges of Development-Induced Displacement. *Occasional Paper*.

Rounsevell, M. D. A., Reginster, I., Araújo, M. B., Carter, T. R., Dendoncker, N., Ewert, F. and Schmit, C. (2006). 'A Coherent set of Future Land use Change Scenarios for Europe', *Agriculture, Ecosystems & Environment, 114*(1).

Roy, A. 2014. 'In Pursuit of Development: Land Acquisition and the Dilution of Legal Provisions', *Journal of Land and Rural Studies,* 2(1).

Roy, R., Ghosh, D. and Bhattacharya, G. 2016. 'Influence of Strong Motion Characteristics on Permanent Displacement of Slopes. *Landslides,* 13(2).

Rozenstein, O. and Karnieli, A. 2011. 'Comparison of methods for land-use classification incorporating remote sensing and GIS inputs', *Applied Geography, 31*(2).

Sahoo, U. and Jojo, B. 2020. 'Examining Displacement, Resettlement and Rehabilitation Processes: The Case of Rengali Dam Displaced Communities in Odisha, India', *The International Journal of Community and Social Development, 2*(1).

Sampat, P. 2013. 'Limits to Absolute Power: Eminent Domain and the Right to Land in India', *Economic and Political Weekly,* 49(19).

Santos, M. J., Watt, T. and Pincetl, S. 2014. 'The Push and Pull of Land use Policy: Reconstructing 150 Years of Development and Conservation Land Acquisition. *PloS one,* 9(7).

Saxena, K. B. 2008. 'Development, Displacement, and Resistance: The Law and the Policy on Land Acquisition', *Social Change,* 38(3).

Scudder, T. 1993. Development-Induced Relocation and Refugee Studies: 37 Years of Change and Continuity among Zambia's Gwembe Tonga. *Journal of Refugee Studies, 6*(2).

Scudder, T. 1996. Development-Induced Impoverishment, Resistance and River-Basin Development', in C. McDowell (ed.), *Understanding Impoverishment: The consequences of development-Induced Displacement* (49-74). Oxford: Berghahn Books.

Scudder, T. and Colson, E. 2019. 'From Welfare to Development: A Conceptual Framework for the Analysis of Dislocated People', In A. Hansen and A. Oliver-Smith (ed.*), Involuntary Migration and Resettlement: The problems and Responses of Dislocated People* (267-287). USA: Westview Press.

Selvaraju, R. Subbiah, A. R. Baas and S. Juergens, I. 2006. Livelihood Adaptation to Climate Variability and Change in Drought- Prone Areas of Bangladesh. Asian Disaster Preparedness Centre Food and Agriculture Organization of the United Nations.

Shah, K.U. Dulal, H.B. Johnson, C. and Baptiste, A. 2013. 'Understanding Livelihood Vulnerability to Climate Change: Applying the Livelihood Vulnerability Index in Trinidad and Tobago', *Geoforum,* 47.

Sharma, R. N. 2010. 'Changing Facets of Involuntary Displacement and Resettlement in India', *Social Change*, 40(4).

Sharma, S., Giri, A., Haque, T. and Tetteh, I. 2018, 'Land Acquisition in India: A Pareto and Kaldor-Hicks perspective', *Land*, 7(2).

Sharma, V. P. 2015. Dynamics of Land use Competition in India: Perceptions and Realities.

Shee, S. P. and Maiti, R. 2019. 'Land Acquisition, Livelihood and Income: The Case of JSW Bengal Steel Plant at Salboni Block, Paschim Medinipur, West Bengal, India', Environment, Development and Sustainability, 21(6).

Sims, H. 2001. 'Moved, Left no Address: Dam Construction, Displacement and Issue Salience', *Public Administration and Development*, 21(3).

Singh, S. 2016. 'Land Acquisition in India: An Examination of the 2013 Act and Options', *Journal of Land and Rural Studies,* 4(1).

Singh, S. and Alka, S. 2018. 'Assessment of Climate Induced Vulnerability in the Bundelkhand Region, India: An Application of Indicator Based Approach', *UPUEA Economic Journal*, 11(3).

Singh, S. and Sanatan, N. 2018. 'Land Inequality and Agricultural Sustainability in Uttar Pradesh, India: A Regional Analysis', *Asian Journal of Science and Technology*, 9(11).

Singh, S. 2018. 'Performance of Indian Agriculture: A State Level Analysis', *Social Science Researcher*, 4(2)

Singh, S. and Alka, S. 2019. 'Farmers' Perception of Climate Change and Livelihood Vulnerability in Rainfed Regions of India: A Gender-environment Perspective', *International Journal of Environment and Climate Change,* 9(12).

Singh, S., Alka, S., and C.B. Singh. 2019. 'Climate Change and Migration: Adapting to Crisis', *Asian Journal of Environment & Ecology*, 11(3).

Singh, S. 2020a. 'Farmers' Perception of Climate Change and Adaptation Decisions: A Micro-level Analysis of Farmers in the Bundelkhand Region, India', *Ecological Indicators,* 116.

Singh, S. 2020b. 'Bridging the Gap between Biophysical and Social Vulnerability in Rural India: the Community Livelihood Vulnerability Approach', *Area Development and Policy*, 5(2).

Singh, S. 2020c. 'Assessing livelihood vulnerability of farmers' in backward regions in India', *Indian Journal of Agriculture Research'*, 54(3).

Singh, S. 2020d. 'Agricultural Development in India: A State-level Analysis', *Asian Journal of Social Studies and Economics,* 6(2).

Singh, S. and Santan, N. 2020. 'Development of Sustainable Livelihood security index for different agro-climatic zones of Uttar Pradesh', *Journal of Rural Development*, 39(1).

Nayak, S. and Surendra, S. 2020. 'Development of gender sensitive vulnerability index for urban Indian Slums', *Indian Journal of Traditional Knowledge,* 19(3).

Singh, S., Sanatan, N., Surendra, M. and Sonali Narang. 2021. 'Biophysical Limits to Economic Growth and Sustainable Development: Perspectives and Approaches', *Asian Journal of Geological Research,* 4(2), 33-44.

Jatav, S.S. and Anup, K. 2021. 'Impact of Covid-19 on the Livelihoods of Rural Farmers in Uttar Pradesh, India', *Journal of Rural Development*, 40(1).

Sinha, A.K. and Jha, K.N. 2016, 'Land Acquisition Issues in Infrastructure Projects - Indian Perspective', *Indian Concrete Journal*, 90 (5).

Sinha, B. K. 1996. 'Draft National Policy for Rehabilitation: Objectives and Principles', *Economic and Political Weekly,* 31(24).

Slater, R. 2002. 'Differentiation and Diversification: Changing Livelihoods in Qwaqwa, South Africa, 1970-2000', *Journal of Southern African Studies,* 28(3)

Slootweg, R., Vanclay, F. and Van Schooten, M. 2001. 'Function Evaluation as a Framework for the Integration of Social and Environmental Impact Assessment', *Impact Assessment and Project Appraisal,* 19(1).

Srinivas, B. K. and Nayak, J. K. 2018. 'Development, Dispossession and Impoverishment in National Aluminium Company (Nalco) Displaced Villages: A Study in Koraput', *Research Journal of Humanities and Social Sciences,* 9(2).

Stanley, J. 2004. 'Development-Induced Displacement and Resettlement, *Forced Migration Online*.

Steinberg, N.C. 2013, 'Losing Water in a Fight for Land: Examining Water Access Amidst Land Acquisition in Northwest India', *Contemporary South Asia*, 21(2).

Sujakhu, N. M. Ranjitkar, S. He, J. Schmidt-Vogt, D. Su, Y. and Xu, J.2019. 'Assessing the Livelihood Vulnerability of Rural Indigenous Households to Climate Changes in Central Nepal, Himalaya', *Sustainability*, 11(10).

Swamy, R. N. 2011. 'Development-Induced Displacement: The Case of Moolampilly', *The Indian Journal of Political Science*, 72(1).

Taylor, M. 2009, 'Displacing Insecurity in a Divided World: Global Security, International Development and the Endless Accumulation of Capital', *Third World Quarterly*, 30 (1).

Terminski, B. 2012. 'Mining-Induced Displacement and Resettlement: Social Problem and Human Rights Issue.

Terminski, B. 2013. '*Development-Induced Displacement and Resettlement: Theoretical Frameworks and Current Challenges',* Geneva, Switzerland: University of Geneva.

Thukral, E. G. 1996. 'Development, Displacement and Rehabilitation: Locating Gender', *Economic and Political Weekly*, 31(24).

Todaro, M. P. 1969. 'A Model of Labor Migration and Urban Unemployment in Less Developed Countries. *The American Economic Review*, 59(1).

Todaro, M. P. and Smith, S. C. 2012. *Economic Development.* New York University and The Population Council Stephen C. Smith: George Washington University.

Tran, P. and Shaw, R. 2007. 'Towards an Integrated Approach of Disaster and Environment Management: A Case Study of Thua Thien Hue province, Central Viet Nam', *Environmental Hazards*, *7*(4).

Turok, I. and Mc Granahan, G. 2013. 'Urbanization and Economic Growth: The Arguments and Evidence for Africa and Asia', *Environment and Urbanization*, 25(2).

Uddin, S. M. N., Gutberlet, J., Ramezani, A., and Nasiruddin, S. M. 2020. 'Experiencing the everyday of Waste Pickers: A Sustainable Livelihoods and Health Assessment in Dhaka City Bangladesh', *Journal of International Development*, 32(6).

Upadhyay, H. and Sheikh, N. 2016. 'Policy versus Performance: Auditing Land Acquisition and Rehabilitation in Odisha', *Journal of Land and Rural Studies*, 4(1).

Van Kamp, I., Leidelmeijer, K., Marsman, G. and De Hollander, A. 2003. 'Urban Environmental Quality and Human Well-being: Towards a Conceptual Framework and Demarcation of Concepts; a literature study', *Landscape and urban planning*, *65*(1-2).

Vanclay, F. 2003. 'International Principles for Social Impact Assessment', *Impact Assessment and Project Appraisal*, 21(1)

Vanclay, F. 2006. 'Principles for Social Impact Assessment: A Critical Comparison Between the International and US Documents', *Environmental Impact Assessment Review*, 26(1).

Vanclay, F. 2017. 'Project-Induced Displacement and Resettlement: from Impoverishment Risks to an Opportunity for Development?', *Impact Assessment and Project Appraisal*, 35(1).

Vandergeest, P. 2003. 'Land to Some Tillers: Development-Induced Displacement in Laos. *International Social Science Journal*, 55(175).

Vandevoorde, S. and Vanhoucke, M. 2006. 'A Comparison of Different Project Duration Forecasting Methods using Earned Value Metrics', *International Journal of Project Management*, *24*(4).

Vermeulen, S. and Cotula, L. 2010. 'Over the Heads of Local People: Consultation, Consent, and Recompense in Large-Scale Land Deals for Biofuels Projects in Africa', *The Journal of Peasant Studies*, 37(4).

Vlaev, I. 2018. Local Choices: Rationality and the Contextuality of Decision Making. *Brain Sciences, 8*(1).

Wahi, N. 2017. 'Land Acquisition in India: A Review of Supreme Court Cases from 1950 to 2016', *3378958*.

Waldram, J. B. 1993. *As long as the rivers run: Hydroelectric development and Native communities*. Winnieg: Manitoba Press.

Wathern, P. 2013. *Environmental Impact Assessment: Theory and Practice*. Routledge.

Weiss, T. G. and Korn, D. A. 2006. *Internal Displacement: Conceptualization and its Consequences*. Rutledge. New York.

Westhoff, W. W., Lopez, G. E., Zapata, L. B., Corvin, J. A. W., Allen, P. and McDermott, R. J. 2008. Reproductive Health Education and Services Needs of Internally Displaced Persons and Refugees following Disaster', *American Journal of Health Education*, 39(2).

Whitehead, J., MacLeod, C.J. and Campbell, H. 2020. 'Improving the Adoption of Agricultural Sustainability Tools: A Comparative Analysis', *Ecological Indicators*, 111.

World Health Organization. 2014. UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) 2014 Report: Investing in Water and Sanitation: Increasing Access, reducing Inequalities.

Wirehn, L. 2017. *Climate Vulnerability Assessment Methodology: Agriculture under Climate change in the Nordic region*. Linkoping University Electronic Press.

Wiréhn, L. 2018. 'Nordic Agriculture under Climate Change: A Systematic Review of Challenges, Opportunities and Adaptation Strategies for Crop Production. *Land Use Policy,* 77.

WCD 2000. *Dams and Development: A New Framework for Decision-Making*. London: Earthscan.

Wu, X., Schuyler House, R. and Peri, R. 2016. Public-Private Partnerships (PPPs) in Water and Sanitation in India: Lessons from China. *Water Policy, 18*(S1).

Wubneh, M. 2018. 'Policies and Praxis of Land Acquisition, Use, and Development in Ethiopia', *Land Use Policy, 73*.

Xu, X., Tan, Y. and Yang, G. 2013. 'Environmental Impact Assessments of the Three Gorges Project in China: Issues and Interventions', *Earth-Science Reviews*, 124.

Zetter, R. 2014. Reframing Displacement Crises as Development Opportunities. *Policy Brief Prepared for the Global Initiative on Solutions*, Copenhagen Roundtable.

Appendices

Appendices

Table 3.3 State Wise Number of Projects Distribution and Project Cost

State	Number of Projects	Total Project Cost (in Rs Crore)
Andaman & Nicobar Islands (UT)	10	1,626.98
Andhra Pradesh	490	3,44,371.08
Arunachal Pradesh	176	2,97,219.64
Assam	182	65,265.09
Bihar	505	2,44,809.40
Chandigarh (UT)	2	954
Chhattisgarh	232	2,67,942.56
Dadra & Nagar Haveli (UT)	3	172.53
Delhi (UT)	60	68,092.74
Goa	43	19,330.81
Gujarat	538	3,50,357.70
Haryana	122	97,622.24
Himachal Pradesh	178	1,09,244.35
Jammu & Kashmir	57	79,194.49
Jharkhand	323	1,06,638.47
Karnataka	698	3,10,234.61
Kerala	147	58,714.13
Madhya Pradesh	849	3,41,063.00
Maharashtra	1154	7,27,225.53
Manipur	13	19,380.85
Meghalaya	17	13,440.34
Mizoram	4	6,609.09
Multi State/ Centre	377	14,33,647.45
Nagaland	7	5,988.58
Odisha	455	2,27,381.39
Puducherry (UT)	6	3,166.42
Punjab	147	59,358.86

Rajasthan	582	2,12,719.15
Sikkim	30	33,742.43
Tamil Nadu	459	3,41,081.08
Telangana	219	3,09,631.29
Tripura	36	17,055.28
Uttar Pradesh	547	3,94,125.26
Uttarakhand	130	63,732.44
West Bengal	444	1,81,869.06
Total	**9242**	**68,13,008.32**

Source: Infrastructure Division Department of Economic Affairs Ministry of Finance, Government of India 2019.

Table 3.4 Sector Wise Number of Project and Cost

Sector/Sub-Sector	Number of Project	Total Project Cost (in Rs Crore)
Communication	**2**	26,182.00
Telecommunication towers	2	26,182.00
Energy	**3311**	2,664,972.14
City gas distribution	3	432.00
Electricity generation (grid)	313	1,249,854.75
Electricity transmission	1279	402,410.88
Gas pipelines	56	104,303.84
Oil pipelines	43	22,086.34
Oil/ Gas/ LNG Storage	44	46,557.19
Renewable energy (grid)	1573	839,327.14
Social and Commercial Infrastructure	**307**	87,627.71
Cold Chain	25	4,136.68
Common infrastructure for industrial parks, SEZ	188	76,109.89
Education	36	522.94
Health Care	12	1,020.99
Tourism	46	5,837.21
Transport	**3766**	1,761,971.18
Airports	79	59,618.75
Inland waterways	8	5,167.90
Ports (excluding captive)	161	155,974.91
Railway track, tunnel, viaducts, bridges	598	403,224.39
Roads and bridges	2798	916,107.95

Urban public transport (except rolling stock)	122	221,877.28
Water Sanitation	**1496**	681,529.32
Irrigation (dams, channels, embankments, etc.)	619	498,574.21
Sewage collection, treatment and disposal system	251	36,898.03
Solid waste management	69	8,539.71
Storm water drainage system	59	8,416.34
Water supply pipeline	455	121,964.10
Water treatment plants	43	7,136.93
Total	**8882**	**5,222,282.34**

Source: Infrastructure Division Department of Economic Affairs Ministry of Finance, Government of India, 2017

Structured Schedule

General Information of Household

1. Name of the Respondent: ……
2. Name of the District …….
3. Name of the Tahsil …….
4. Name of the Block ……..
5. Name of the Village …….
7. Number of Family Members ……
8. Respondent Code …….

Section-1

Q.1.Household Profile

Name of the Family Member	Age	sex *	Nature of the Family **	Marital Status ***	Caste $	Religion $$	Education #	Occupation ##	Annual Income

*****Male-1, Female-2.
******Single Family-1, joint Familiy-2.
*******Married-1, Unmarried-2, and Widow-3.

$General-1, OBC-2, SC-3, ST-4, Others-5.

$$Hindu-1, Muslim-2, Christian-3, Sikh-4.

Illitreate-1, Primary-2, Junior-3, Higher Secondary-4, Graduate-5, Postgraduate-6, Diploma/Professional Courses-7

##Unemployed- 0, Self-Employed in Agriculture-1, Casual Labour in Agriculture-2, Business-3, Government Empolyed-4, Private Employed-5, Daily Wage Labour-6.

Q.2. Different Source of Income

Source of Income	**Monthly Income (rs) Before Displacement/Land Acquisition**	**Monthly Income (rs) After Displacement/Land Acquisition**
Self- Employed in Agriculture		
Casual Labour (Agriculture)		
Business		
Government Employed		
Private Employed		
Daily Wage Labour		
Total Income		

Q.3.Basic Amenities of Household

Status of Basic Amenities Before and After Displacement and Land Acquisition

	Before displacement	**After displacement**
Nature of houses	Owned/Rented	Owned/Rented
Quality of House	Kacha/Pukka/Sami Pukka/other	Kacha/Pukka/Sami Pukka/other
Source of Light	Electricity/Kerosene/Battery/Solar	Electricity/Kerosene/Battery/Solar
How Many Hours Getting Electricity		
Source of Drinking Water	Hand Pump/Public Tap/Pipe Water/other	Hand pump/Public Tap/Pipe Water/other
Source of Cooking	LPG/Chulla	LPG/Chulla
Source of Fuel	Wood/Cow Dung Cake/any other	Wood/Cow Dung Cake/any other
Place of Collecting Fuel	Jungle/Village/any other	Jungle/Village/any other
Sanitation Facility	Latrine/Flush/Open Field/Public Latrine/other	Latrine/Flush/Open Field/Public Latrine/other
Source of Irrigation	Canals/Tube Well/Ponds-Bells/Boring/ others.	Canals/Tube well/pond-Wells/Boring/ others
Tress of your Land	Yes/No	Yes/No

Q.4.If yes, How many Trees, and what was their approximate value?

…….

Q.5. What happened to those Trees?

1. Sold ☐ 3. Taken away by the Company ☐

3**.** Any other purpose (Specify)……

Q-6.Household Assets

Items	Before Displacement		After Displacement	
	Yes	**No**	**Yes**	**No**
Car and Jeep				
Bicycle				
Motorcycle				
Bullock Cart				
Fodder cutting machine				
Tractor				
T.V.				
Refrigerator				
A.C.				
Mobile Phone				
Fan/Table/Chair/Almirah				

Fan-1,Table-2,Chair-3,Almirah-4,other-5.

Q.7. Consumption Expenditure

Item Group	**Monthly Per Capita Expenditure (MPCE) in (rs) Before Land Acquisition**	**Monthly Per Capita Expenditure (MPCE) in (rs) After Land Acquisition**
(1) Food Item		
Cereals pulses & their products		
Milk, oils, egg, fish &meat		
Sugar, salt and spices		
Beverages, refreshment, processed food (jam, pickles)#		
Food Total		
(2) Non Food		
Pan, tobacco & Intoxicants		
Fuel and light		
Clothing & Footwear$		
Education		
Medical		
Consumer Services(tailoring charges)		
Mice, goods, entertainment		
Rent		
Taxes and Cesses		
Non- food Total		

Source: NSSO (# include purchased cooked meals & excludes tailoring charges)

Section-2

(A) Land Pattern Change

Q.8. Which type of land having?

1. Agricultural Land 2.Non-Agricultural Land 3. Both type Land

Q.9. What is the value of land in acres (lakh & crore before displacement).

(1) Value of Agricultural Land …….

(2) Value of Non-Agricultural Land
…….

Q.10. Which type of land was acquired for the development purpose?

1. Agricultura Land 2.Non-Agricultural Land 3. Both type Land

Q.11.If agricultural land has been acquired then which type of problems suffered by household (consumption pattern, occupation pattern, employment pattern, income pattern)

Others Please specify……

Q.12.If non-agricultural land has been acquired, then which type of problems suffered by you (consumption pattern, occupation pattern, employment pattern, income pattern, pattern)

Others Please specify……

Q.13.Acquired land under which type of development activity.

(1) Road/Highways (2) Buildings (3) Shopping mall (4) Education Centres (5)

Land Holdings	**Type of acquired land before displacement (acres)**	**Price of Land (in Lakha)**
Fertile land		
Non fertile land		
Irrigated land		
Non irrigated land		
Total		

airport (6) others

Q.14. Specify the various category of acquired land.

(B)Land Utilisation

Q.15. Details of Land Utilisation

Sr.no	Before Displacement Crops Grown		Area	Quantity	After Displacement Crops Grown		Area	Quantity
	Winter	Summer			Winter	Summer		

(c) Live Stock

Q.16. Details of Live Stock.

Animal types	Before displacement		After displacement	
	Yes	No	Yes	No
Cow				
Buffalo				
Bullocks				
Goat				
Sheep				
Poultry				
Any other				

Section-3

(A)

Land Acquisition Policy/Act

Q.17. Are you aware of any written policy by the government on fair compensation and transparency in land acquisition and resettlement &rehabilitation and resettlement?

1. Yes ☐ 2. No ☐

Q.18. If yes, then policy is helpful for you.

(1) Strongly agree (2) Agree (3) strongly disagree (4) Disagree (5) Neutral.

Q.19. Where from you know that your land is acquiring?

(1) Newspaper (2) friends/relatives (3) Pradhan (4) advertisement (5) tahsil (6) D.M.

If other than specify……

Q. 20. Is Social Impact Assessment and Environment Impact Assessment done by the land acquiring authority?

(1) Yes (2) No (3) don't know

Q.21. Did you feel that you get better standard of living?

(1) Yes ☐ (2) No ☐

Q.22. Did you feel that you get better suitable income possibilities after displacement and land acquisition?

(1) Yes ☐ (2) No ☐

Q.23. What was the type of displacement?

(1) Voluntary displacement ☐ (2) Forcefully displacement ☐

Q.24. How many days later do you get advance notices for shifting from your location.

(1) 15 (2) 30 (3) 45 (4) 60 (5) other……

Q.25. Income restoration and any other training opportunity is given by the land acquiring authority.

(1) Yes ☐ (2) No ☐

(B)

Compensation of land/Home

Q.26. Are you get compensation for your land/home?

(1) Yes (2) No (3) partial

Q.27. If yes, from which channel you get compensation.

(1) Market rate ☐ (2) circle rate ☐

Q.28.Determination of Circle rate.

(1) Use previous circle rate at the time of Acquisition (?.....).

(2) Use current rate circle rate at the time of compensation.

Q.29. Type of compensation.

(1) Land to cash 2) land to land + for construction of home cost (3) 1+2+3

Q.30.Whichtype of area or location of your land/home?

(1) Attached from road (2) far from the road (3) others

Q.31. If your land is attached from the road, then how much amount received

……..

Q.32.If your land far from the road, then how much amount you received.

……..

Q.33. How much amount did you receive from the government/land acquiring authority per acre (agricultural+ non-agricultural land).

(1) 1 lakh- 10 lakh 2) 11 lakh -50 lakh (3) 51 lakh -1 crore (4) 2 crore – 5 crore (5) other……..

Q.34. How much amount you received from the government/land acquiring authority for per acre (non-agricultural land).

(1) 1 lakh- 10 lakh 2) 11lakh -50 lakh (3) 51 lakh -1 crore (4) 2 crore – 5 crore (5) other ……..

Q.35.You get compensation amount once a time or instalment wise.

……..

Q.36.How many compensation instalments received?

……..

Q.37. Are u satisfied with the compensation amount?

(1) Yes (2) No

Q.38. If no then how much do you expect to get for your land?

……..

Q.39. Reason for unsatisfaction of compensation amount.

(1) Compensation amount is not according to land value

(2) Compensation is delay by the land acquiring authority

(3) Lack of proper documentation of displaced person

(4) Transportation cost

Any other specify……

Q.40.What type of difficulties are you facing at the time of receiving compensation?

(1) Loss of time Yes/No

(2) Loss of money Yes/No

(3) Bribe Yes/No

(4) Communication gap Yes/No

Q.41.Resettlement location has been confirmed at the time of land acquisition

(1) Yes (2) No

Q.42. Are you satisfied with the new location of your village?

(1) Fully satisfied (2) partly satisfied (3) Less satisfied (4) Un- satisfied (5) Neutral.

Q.43.for what purpose you utilised your compensation amount.

No	Items	Options	Amount (in Rs)
1	Purchase of new land		
2	Construction of new house		
3	Purchase of gold and other similar item		
4	Repayments of old depts and for new loans		
5	Purchase of consumer item like T.V, Vichile A.c, etc		
6	Marriage of children		
7	Socio religious Rituals		
8	Deposited in Bank		

9	Used foe business		
10	Other specify….		

Q.44. You get any type of employment by acquiring authority.

(1) Yes ☐ (2) No ☐

Impoverishment Risk due to Development Projects

(a)

Landlessness

Q. 45. Do you feel that landlessness (agricultural land) has increased after displacement/ land acquired

(1) Yes ☐ (2) No ☐

Q.46. Livestock status after displacement or land acquired

(1) Increased (2) decreased (3) no change

Q.47. Yield status after displacement.

(1) Increased (2) decreased (3) no change

(B)

Joblessness

Q.48. You have jobafter displacement/ land acquired

(1) Yes ☐ (2) No ☐

Q.49. if yes, which type of job?

(1) Agricultural labour (2) industrial labour (3) wage worker (4) business (5) others.

Q. 50. After displacement, which type of job you find?

If any specify……..

Q.51. Do you feel that Investment or Income is a problem for finding a new job?

(1) Yes ☐ (2) No ☐

Q.52. After displacement or land acquired,wage or income is sufficient.

(1) Yes ☐ (2) No ☐

(C)

Homelessness

Q 53. Do you feel homelessness increases due to the development Projects?

(1) Yes ☐ (2) No ☐

Q.54. Where you staying after displacement/ land acquisition

(1) Own house ☐ (2) rented house ☐

Q, 55. Are you a victim of multiple displacements?

(1) Yes ☐ (2) No ☐

(D)

Food Security

Q.56. Do you get sufficient food per day.

(1) Yes ☐ (2) No ☐

Q.57. Is your consumption pattern change after displacement/ land acquisition.

(1) Yes ☐ (2) No ☐

Q.58. how many days later you get food, vegetable, milk etc in a month?

(1) One weak (2) two weak (3) three weak (4) none (5) other.

Q.59. foodavailability

For Food Security	Before displacement	After displacement
Ration Card	Yes/No	Yes/No
Type of Ration Card	APL/BPL/Other	APL/BPL/Other
Ensuring production of adequate food supplies	(Yes/No)	(Yes/No)
maximizing stability in the flow of supplies	(Yes/No)	(Yes/No)
Ensuring access to available supplies on the part of those who need them	(Yes/No)	(Yes/No)

(E)

Pollution and Health

Q.60.Do you feel that air pollution is increased by development activities?

(1) Yes ☐ (2) No ☐

Q.61.If yes then.

(1) Low(2) Very Low (3) Moderate (4) High (5) Very High

Q.62. Do you feel that increase heat waves due to development projects and environment degradation?

(1) Yes ☐ (2) No ☐

Q.63.If yes then.

(1) Low (2) Very Low (3) Moderate (4) High (5) Very High

Q.64. Do you feel that increase noise pollution due to development projects?

(1) Yes ☐ (2) No ☐

Q.65If yes then.

(1) Low (2) Very Low (3) Moderate (4) High (5) Very High

Q.66. Do you feel that increase dust pollution is due to development projects?

(1) Yes ☐ (2) No ☐

Q.67If yes then.

(1) Low (2) Very Low (3) Moderate (4) High (5) Very High

Q.68. Any family member suffering from any disease.

(1) Yes ☐ (2) No ☐

Q. 69 If yes, which type of disease.

…….

Q.70.When you suffered from this disease.

(1) Before displacement (2) After Displacement (3) No Change

Q. 71. Health facilities.

Particulars	**Before Displacement**			**After Displacement**		
	Yes	**No**	**Numbers**	**Yes**	**No**	**Numbers**
(a)Primary Health Centers/ Dispensary						
(b)Homeo/ Ayurvedic/ Unani Dispensary						
(c) Maternity Centre						
(e) Private Doctors						
(f) Veterinary Centers/Dispensary						
(g) Government Hospital						
(Private Hospital)						

Q.72. if a hospital facility is not available in your village, then a distance of the nearest hospital (k.m.).

(1) 0-05 (2) 05-10 (3) 10-15 (4) 15-20

Q.73. fess charges of doctor (year) ……

Q.74.Is health cost increased after displacement/ after-acquired land?

(1) Yes (2) No (3) no change

(F)

Education

Q.75.do you think education is affected by development projects.

(1) Yes ☐ (2) No ☐

Q. 76. Distance of educational institution from residence (k.m).

(1) 0-1 (2) 2-5 (3) 5-8 (4) 8-10 (5) others

Q.77. which type of school is in the displacement area?

(1) Private (2) government (3) semi- government (4) primary (5) no school

Q. 78. Types of colleges, institutions in displacement area?

(1) Government institutions (2) private institutions (3) university (4) others (5) no institution

Section – 6

Development Projects Impact on Environmental Degradation

Q.79. What you feel that the major development activities impact on water resources and water quality.

(1) Yes ☐ (2) No ☐

Q.80.Is there a significant impact of development project on environment degradation?

(1) Strongly agree (2) Agree (3) strongly disagree (4) Disagree (5) Neutral.

Q.81 Do you feel that due to construction activity, the temperature of your area is increased.

(1) Strongly agree (2) Agree (3) strongly disagree (4) Disagree (5) Neutral.

Signature of the Respondent