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Understanding Human-Environment Relationship of Local Communities -
A Case Study of Nijgadh International Airport

by
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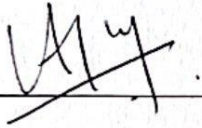
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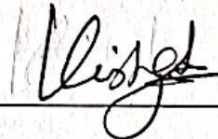


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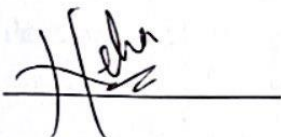
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Abstract

The human-environment relationship is changing with expansion of infrastructure over the years. While infrastructure expansion is integral to the national development, the associated consequences such as environmental degradation, social injustice and economic marginalization of local communities are often overlooked. This study seeks to understand the relationship between local communities and their surrounding environment; along with the socio-economic consequences due to infrastructure expansion. The research focuses on three settlements in and near the Nijgadh forest of Nepal: Tangiya Basti, Kathgaon, and Matiyani Tole which lie in the project area of Nijgadh International Airport. Qualitative methods such as Key Informant Interviews (KII), Focus Group Discussions, and Observations and Quantitative methods such as Household survey has been carried out in addition to review of different literatures. The research reveals the community are dependent on their surrounding ecosystem for livelihood such as agriculture, cattle grazing, chopping firewoods, non-timber forest products, etcetera. The findings also reveal how infrastructure projects can hinder development, taking the investment away from communities for their access of basic infrastructure services such as electricity, communication network, hospitals for years. The proposed airport could lead to social disintegration and economic marginalization of the communities pushing them further below poverty and jeopardizing their livelihood. This can be seen already in dissatisfaction of Kathgaon in regards to the cash compensation which has led residents to purchasing land in other areas. This can lead to decline in their social standing and isolation in existing rituals; as no proper livelihood and social assistance can be seen. With the help of active participation and consultation with the affected communities; inclusive and gender sensitive Resettlement Action Plan is required which utilizes existing skills such as carpet weaving; provide vocational training and income generation schemes; grants and subsidies to reflect existing ways of life.

Keywords: *local communities, indigenous, Nijgadh, development, infrastructure expansion, resettlement.*

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Sincerely,

Neha Rathi

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1. Introduction

1.1. Background

At this fast-changing world, deforestation and many human driven activities are causing rise in global temperatures and loss of biodiversity. This is leading to increased need of protecting the green spaces such as forests, as well as conserving the environment and natural resources. Thus, in turn, affecting the relationship between humans and environment.

Human Environment relationship refers to the interaction of humans with their natural and built environment. This relationship also extends to address the concept of place attachment, the sense of functional or emotional attachment to a place and environment ethics. As mentioned by Drissi (2020), indigenous people along with local communities possess and manage at least a quarter of land. It is important to understand the local community's perspective and relationship with natural environment. But, one of the important factors of development especially in developing and underdeveloped countries is Infrastructure Expansion. Yet in the course of development and economic growth, the factors such as the environment and the community are intertwined with the consequences of the unregulated expansion and environment degradation.

There are many such projects from Kenya's Railway line (Nyumba, 2021) to our own country's Nijgadh International Airport. However, during the planning of such projects, matters of environmental conflict, lack of community participation and social injustice come into the picture. Fernholz (2010) states: "Overall, major infrastructure projects aim to improve economic growth and well-being in a country or region. Yet, many studies show that the people living in the proximate areas frequently do not share in these benefits, and often suffer major economic, health, and cultural losses." Despite the undeniable gravity of these issues in the development and planning process, many a times these factors are overlooked or given very less consideration in such projects. In context of development and infrastructure with growing population and extreme climate changes, there is an urgency to forge a sustainable relationship with our ecosystem (Buscardo et al., 2021).

The terms of Nijgadh International Airport go way back to 1995 when the government-initiated discussions to construct an international airport of 80 square kilometer in Nijgadh, in the Bara District in southeastern Nepal. (GAAM, 2017). The project remained in discussion but it regained its priority after a Turkish Aircraft skidded off runaway in Kathmandu in March 2015,

after which airport remained shut for 4 days. The debate surfaced after government was compelled to an Environmental Impact Assessment (EIA) report which showed that the project would require cutting of 2 million trees (Dhakal, 2018).

The project area for airport is in immediate proximity to Parsa National Park, 175km south from Kathmandu. The area is a forest corridor for significant wildlife like tigers and elephants, while also hosting a rich biodiversity. The entire area is blanketed in dense forests of Shorea Robusta trees, also known as Sal or Sakhuwa (Prasain & Pradhan, 2022). Losing the forest would mean loss of 0.28 million tons of oxygen in the atmosphere yearly as the forest can transpire up to 81.96 tons of water a year into the atmosphere. (Jha, et al., 2020). In the wake of numerous protests and debate in May 26, 2022; Supreme court ordered the government to halt the construction of Nijgadh International Airport. Surprisingly, despite this ruling, a year later, on May 20, 2023; government decided to move ahead with the construction process (RSS, 2023).

While most of the process has centered around the environment ethics there is also an anthropocentric aspect that needs to be considered together. The area has three communities: Kathgaon, Tangiya Basti and Matiyani Tol living around. Kathgaon is an old settlement comprising mainly of indigenous Tharu community along with Bahun and Chettris while Matiyani comprises of 39 families of Dalits established in 2061 BS (Shah, 2019). The forest is home to the people of Tangiya Basti, who have lived there since 1974-75, and have been promised by the government to resettle them. Tangiya Basti settlement was initially resettled by the government during 2032 BS for plantation program under the governance of His Majesty Mahendra Bir Bikram Shah Dev; the majority ethnic group comprises of Tamangs. The government has failed to support and develop these communities without access to basic infrastructure services in many cases.

The social and environmental repercussions of infrastructure expansion are inseparable. As Schlosberg (2013) states, the main focus of environmental justice also includes the holistic view of the dynamics between human, nature and culture into conservation – it endeavors to explain the question of why minority communities are devalued in the first place.

1.2. Problem Statement

Nijgadh Airport has been an important debate in the past year gaining the attention of national and international media over its implications to the ecology and the displacement of 8000

people of Tangiya Basti settlement belonging to Janajati group. Even though a multitude of discussions and debates about the environmental impact of the construction have emerged in the media and research domains, there is a notable dearth of rigorous research done to understand the issues of environmental ethics and social injustice for development projects, particularly in the context of our country.

In light of this, two divergent schools of thought have emerged. The first one as stated in Poudyal (2019) that cost-benefit analysis and economic benefits outweigh the environmental aspects. Conversely, the second school has elucidated and argued as stated in Shrestha (2021) that Nepal's political class has established a nefarious collusion in which profiteering at the expense of ecology is normalized. A noticeable conflict is also apparent between the anthropocentric and non-anthropocentric theory of environmental ethics where much consideration has been given to anthropocentric school of thought.

The impact of the construction on the environment is a huge concern, which has been rigorously studied and debated. However, an equally vital aspect of human-environment relationship concerning the local communities remains relatively unexplored. Regrettably, the voice of the Tangiya Basti along with other local communities seems to be subdued in this context. It is crucial to amplify their voices and ensure their meaningful inclusion in discussions surrounding the project's environmental impact and the broader human-environment relationship. While the existing studies have explored the political power and justice in this context, there remains a notable gap understanding the intricate relationship between local communities and nature, as well as the repercussions on their livelihoods. This research endeavor seeks to address these research gaps by encompassing the crucial factors of environmental ethics, the human environment relationship and indigenous perspectives within the local communities.

Throughout the course of the planning of Nijgadh Airport, the local communities and minority groups, such as the Tangiya Basti, have been noticeably overlooked even though they are the stakeholders who are most affected by the development. This situation calls into question a significant issue regarding the lack of community participation in the planning process. By incorporating the voices and perspectives of local communities, this research strives to comprehend the nuances of their livelihood and community, thereby providing a holistic perspective of their interaction with the natural environment.

1.3. Rationale of Research

1.3.1 Need of the Research

The development projects have not been studied from the lens of the relationship these local communities share with the environment which is integral to understanding the gravity of the development projects. The dearth of environmental ethics, and social injustices to be endured by the residents of the local communities assert the need for research for careful consideration in future development projects. This research aims to address the research gaps pertaining to lack of consideration given to human environment relationship and the indigenous perspectives of these local communities within the context of infrastructure expansion project. Recognizing the human-environment relationship and indigenous perspectives are integral aspects of environmental ethics, this study further aims to shed light on these dimensions to foster a more comprehensive understanding of the complexities involved in such large-scale infrastructure projects.

It is noteworthy that till date the project authorities have failed to manage or take proper course of action regarding 1500 landless households leaving their lives in a dilemma. This apparent lack of attention regarding the airport's impact on these communities raises critical questions about the safeguarding of their interests (Geschewski & Islar, 2022). Moreover, being a Janajati group, these communities have their own culture, beliefs and relationship with the environment – aspects that demands investigation to comprehend their perspective and position in this whole planning process.

1.3.2 Importance of the Research

The research can serve as a critical instrument elucidating the perspectives of these local communities, offering invaluable insights beneficial to future planners, policy makers and decision-makers. Moreover, this research can also hold significant potential to the stakeholders and activists involved in the proposed project of the Nijgadh International Airport.

1.4. Research Purpose

This research requires qualitative analysis. The research question for the study is:

“What is the human environment relationship that the local communities share and how will it be impacted due to the construction of Nijgadh International Airport?”

Some of the sub – question that this research tries to explore are:

1. What kind of relationship do local communities at Nijgadh have with their natural and built environment?
2. How do the socio-economic conditions and environmental relationships of these communities change with the construction of the airport?
3. What are the key parameters for resettlement of these local communities?

1.5. Expected Outputs

This research aims to understand the human environment relationship and the indigenous perspectives of these local communities within the context of infrastructure expansion project by the end of this study. In the end of the study, researcher seeks to shed light on the dimensions of human-environment relationship to foster a more comprehensive understanding of the complexities involved in such large-scale infrastructure projects.

The research will help to comprehend the local communities' culture, beliefs and environmental relationship with the forest along with the socio-economic aspects of their livelihood.

2. Conceptual Framework and Research Methodology

Ecosystem is an interaction of living and non-living organisms which help in the survival of mankind. Human beings and nature are inexplicably linked and interconnected. The natural environment and local communities are not two different entities but two systems that are embedded and influence one another. The relationship that human beings as in local communities share with natural environment around them is very integral to reach a sustainable model which not only accounts economic development but also integrates holistic approach of environmental justice, place attachment and quality of life of local communities.

“Research is a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles” (Grinnel, 1993, as cited in Uprety, 2022). There are different types of research based on the perspective of the objectives. This research falls under exploratory research as this explores and tries to investigate a real-world problem which has not been studied in depth.

2.1. Research Paradigm

As stated by Mertens (2005), the nature of the research is influenced by the theoretical framework or paradigm of the researcher. The framework attributes to the intent and presumption of the research. It is the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Kuhn, 1970). Paradigm involves our interaction with the reality than representing or conceptualizing it.

The positivist research paradigm deals with absolute reality which is determined by cause and effect. But the research focuses on respondent’s perception of their own reality which cannot be singular, and neither can they be measured in controlled forces as in experimental research, so this research does not fall under positivist paradigm.

The criticism of positivism approach led to emergence of post positivism which is based on methodological pluralism. It was physicists Werner Heisenberg and Niels Bohr who changed the direction from the centered view of positivism; leading from certainty to probability (Crotty, 1998). The ontological position of the post positivism is based on critical realism, that believes that there is a reality independent of the observer that can be studied through the scientific method wherein this reality cannot be known with certainty. The post positivism approach does fit in better than the positivist but the research approach is rooted in objective

reality wherein it construes that there can be multiple realities. The paradigm is oriented towards quantitative methods and does not account social reality of the participant so this research cannot be approached through post positivist paradigm.

Interpretivist/ Constructivist paradigm approach focuses on understanding “the world of human experience”. The ontological position of the paradigm is based on realities being socially constructed. Constructivists do not begin with some premises in their research but rather draw conclusions by observations through a series of pattern (Creswell & Creswell, 2017, as cited in Mackenzie & Knipe, 2006). The paradigm is solely based on qualitative data collection methods but since our research also takes into account the quantitative data as well to better understand the reality, so this research paradigm is not correct for the following research.

The pragmatic paradigm refers to a worldview that focuses on “what works” rather than what might be considered absolutely and objectively “true” or “real.” (Weaver, 2018). It is based on worldly experience that rejects traditional philosophical dualism of objectivity and subjectivity (Biesta, 2010). Pragmatism focuses on the practical consequences of beliefs and actions, emphasizing the importance of experience, context, and the social dimensions of knowledge. The paradigm recognizes the need of understanding the social experiences and perspectives of the local communities in such large infrastructure projects. The paradigm facilitates understanding the relationship requires understanding perspectives of different stakeholders with varying viewpoints and social experiences. This research integrates qualitative data along with quantitative to better understand the research problem.

2.1.1. Ontology

For ontological claim, this paradigm is not limited to any singular reality or knowledge rather in the approach, but believes that beliefs and habits are socially constructed (Yefimov, 2004; as cited in Kaushik & Walsh, 2019). The reality is actively created as individuals act in the world; it is changing continuously based on the human experiences and oriented towards solving real world problem (Weaver, 2018). The pragmatic paradigm recognizes the complexity and multifaceted dynamics of relationship of local communities with their natural environment. From relativist ontological position, the relationship of communities with natural ecosystem along with their position on such large infrastructure projects is more subjective and contingent upon socially constructed beliefs, values and perceptions of the respondent. Since this paradigm is continuously evolving and also simultaneously addresses the multiple realities

of the respondent and their perception of their social world, this paradigm is best suited for the research.

2.1.2. Epistemology

The epistemological claim of the pragmatists lies in the fact that the knowledge is always based on new experiences which are guided by the social perceptions of the respondent. This research seeks to understand the social reality of the problem through respondent's perception and understanding which is in turn shaped by their social experiences. So, the research helps to generate new knowledge in the field of human environment relationship, specifically understanding the social injustice faced by minorities in the infrastructure expansion process. The paradigm recognizes the complexity of relationship being dynamic and continuously evolving which requires researcher to subdue their biasness and refine their understanding continuously as per the evolving insights. The perspective of local communities is shaped by their social experiences and cultural practices. The use of the knowledge generated by the perspectives of these local communities along with empirical knowledge helps researcher to gain a nuanced understanding of the effects of construction of such large-scale projects such as airport on local communities and their environment.

2.1.3. Methodology

This research uses mixed methodologies as the social reality cannot be quantified imperfectly only neither can it be understood only through interpretivist tools only as there is a certain degree of fabrication of social perception of the respondents. Unlike positivistic researchers, who assert an objective knowledge acquired by examining empirical evidences and hypothesis testing, and constructivists, who propose that knowledge is relative and reality is too complex, pragmatists believe that the process of acquiring knowledge is a continuum rather than two opposing and mutually exclusive poles of either objectivity and subjectivity (Goles & Hirschheim, 2000). As previously stated, the research delves into the social realities experienced by local communities in relation to the impacts of the airport construction. Additionally, the research seeks to enhance our understanding of the human environment relationship. Consequently, this requires the research to be analysed through both qualitative and quantitative research methods to get a better understanding of the problem. By employing a combination of these approaches, the research aims to capture a comprehensive and nuanced understanding of the complex issues at hand. The paradigm also emphasizes on using multiple data sources to validate the findings to critically examine researcher's position in the research process and be aware of their own biasness.

2.2. Research Strategy

This research tries to explore a social problem in real world setting so it lies in the domain of an exploratory research. The exploratory research aims to investigate problems that have not been clearly defined or there is limited existing knowledge. The research seeks to understand the relationship between the local communities and their natural environment alongside their position on the construction of Nijgadh International Airport which has not been clearly defined. As exploratory research, the research seeks to investigate a real-world problem which has not been studied in depth.

The research uses case study approach to understand the social reality. Rather than describing, the method examines the “how” and “why” of a phenomenon. A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2009). This includes an in-depth investigation to explore the causes of underlying principles. The case studies can be either single or multiple include quantitative evidence, and benefit from the prior development of theoretical propositions.

The research is an exploratory case study research as it seeks to answer “how” and “what” questions wherein researcher has limited understanding of the social problem. The case study as a strategy allows researcher to understand the complexities of multifaceted relationship that these local communities share with their natural environment. The approach helps to delve into the insights and perspectives of local communities and these are mostly influenced by their social reality and experiences of the communities. The research will be based on case study to understand the social problem in the context of Nijgadh. The approach is important to study the social problem based on the people’s perception in its real-world setting which is continuously evolving.

2.3. Research Methods

The research uses mixed methods as in both quantitative and qualitative methods to understand the problem. The research uses quantitative methods such as Household Surveys to learn about the general characteristics such as livelihood, income sources, access to resources and perceptions of their surrounding environment. Along with the quantitative method, the research also utilizes qualitative methods such as Key Informant Interviews (KII), Focus Group Discussions, Observations to gain more insight into the perception of the local communities.

Table 1: Data Collection Tools

Data Collection Tools	Primary or Secondary	Qualitative or Quantitative	Use
Household Survey	Primary	Quantitative	To understand general characteristics of population.
Key Informant Interviews	Primary	Qualitative	To gather qualitative data on their experiences, perspectives, and perceptions of the environment and the impact of infrastructure projects.
Reconnaissance Survey	Primary	Either	To observe key features of the area.
Direct Observation	Primary	Qualitative	To observe the participants of the community.
Focus Group Discussions	Primary	Qualitative	To gather diverse perspectives on the topic.
Literature Review	Secondary	Either	To situate research in an existing body of work or to evaluate trends within a research topic.
Case Study	Secondary	Qualitative	To understand the topic in another case area context

Direct observation required researcher to not be a participant but observe the situations as an unobtrusive external to steer clear of their biasness in observations which can be integral to case studies.

The research also included semi structured in-depth interviews with the individuals of local community to understand their stand and challenges (Annex II). The interviews were done in all the three settlements: Tangiya Basti, Kathgaon and Matiyani Tole. There was a total of 43 household interviews taken in which 18 belonged to Tangiya Basti, 10 to Kathgaon and 15 to Matiyani Tole (Annex I). A total of 13 key informant interviews were done in Kolhabi, Nijgadh and Jitpur Simara. Focus Group Discussions (FGDs) helps in understanding the context from diverse perspectives from a group of populations regarding a certain context. The Focus group



Figure 2: Household Interview



Figure 1: Focus Group Discussion in Matiyani Tole

discussion was done in Matiyani tole (Annex IV).

Secondary data was also collected through review of existing literatures, government reports, print media, newspaper articles and the internet. The existing case histories in terms of local communities impacted by large infrastructure projects and their resettlement process has been also studied to gain more insight into the research topic. The research tries to compare communities affected by such large infrastructure projects to identify the impacts and underlying perspectives of these communities.

Different types of data sampling were used for different methods. For questionnaire survey, the data were collected on the basis of stratified random sampling. Random stratified sampling involves selection of random sample size from the population. For the other qualitative research methods such as Focus Group Discussions and KII, the research implored non-probabilistic sampling such as stratified purposive sampling.

Table 2: Interest Groups

Interest Groups	Affiliation
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Local Community Residents	Tangiya Basti Kathgaon Matiyani Tol Members of Tangiya Basti Sarokar Samiti
Local Government Representative	Representatives of Jitpur Simara and Kolhabi Municipality Ward Chairpersons Ministry of Culture, Tourism and Civil Aviation Ministry of Forest and Environment
Activists	Activists involved in the Nijgadh Airport Human Right Activists NGOs/INGOs
Human Settlement Experts	Urban Planners Forest and Environment Experts Social Experts

For different objectives, different types of research methods were used to understand the research problem as shown in Table 3.

Table 3: Data Collection Tools used for different objectives

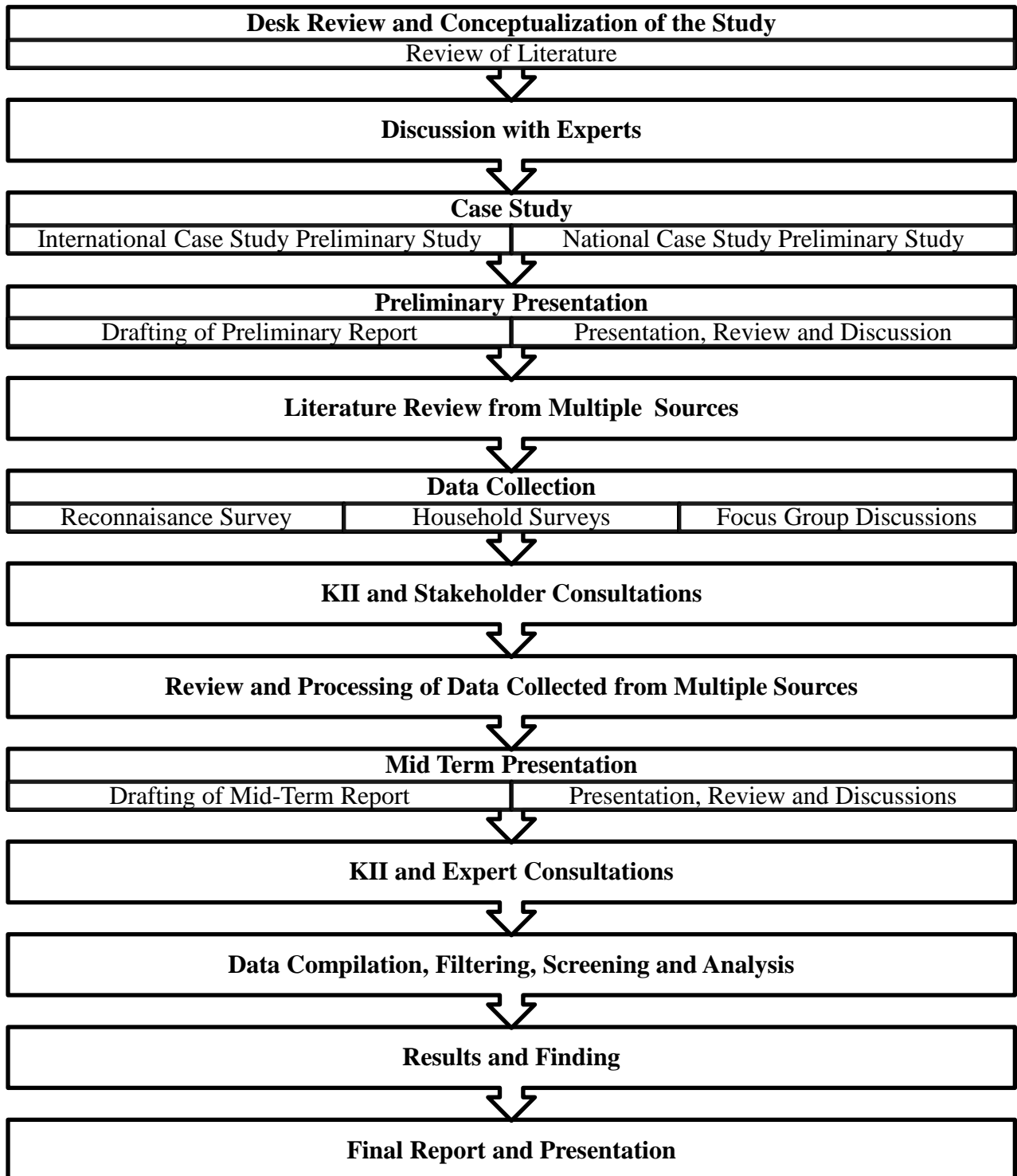
S.No.	Objectives	Indicators	Data Collection Tools
1.	To under human-environment relationship	Forest, Rivers, Wildlife, Practices	Household Survey Key Informant Interviews Study of existing literature such as EIA report, other literature based on the area. Reconnaissance Survey
2.	Existing Socio-economic conditions	Existing Social Situation Existing Economic Condition	Household Survey Key Informant Interviews Direct Observation Household Survey Key Informant Interviews Direct Observation
3.	Changing Socio economic condition after the construction of airport	Opportunities of New Employment New Social Dynamics	Focus Group Discussions Household Survey Focus Group Discussions Key Informant Interviews Literature Review

4.	Key parameters for resettlement of these local communities	Resettlement Dynamics	Case Study Literature Review
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2.4. Research Logic

Research Logic is an integral part of any research as the researcher’s thinking becomes more critical. Logic is a study of reasoning to distinguish good reasoning from bad, or better from worse (Oo, 2020). This research cannot be based on deductive logic as there is no existing theory which can be tested as this is more oriented towards exploratory research. Inductive logic starts with a conclusion and serves to relate the specific topic to a broader context. Whereas, abductive logic draws on the concepts and meaning used by social actors and the activities in which they engage – the meanings and interpretations, the motives and intentions which people use in their everyday lives and which direct their behavior (Uprety, 2022). As this research is exploratory based and tries to understand the social reality, this uses inductive and abductive logic as the researcher is themselves a tool for measurement.

2.5. Research Process



2.6. Research Ethics

The research ethics is an integral part of any research. Understanding real-world occurrences, researching efficient therapies, examining habits, and enhancing lives in other ways are frequently the objectives of human research. There are important ethical considerations in both what we chose to research and how we conduct that research.

This research is focused on a social problem and seeks to explore perspectives and impacts of a certain phenomenon. The research is oriented towards following the right process than seeking any ultimate result which is why it lies in the scope of deontological ethics. The research methods are to be carried out in a process that does not harm the respondents and also does not discriminate on the basis of race, age, ethnicity, gender, religion, disability etc. It is also very important to gain an informed consent from all the research participants and be very sensitive and respectful to their beliefs and practices. The researcher is also aware of the biasness that can be formed during such studies and tries to present an accurate account of the case.

2.7. Limitations

The construction of the Nijgadh International Airport has been an issue covered by many aspects of media and political parties. The research focuses on the socio-economic aspects of the local communities and does not adhere to any political bias or views. The research does not study if the airport itself should be built or not instead focuses on the aspects of what is the community's relationship with the environment; how community perceives the construction of airport, how their life would be affected due to the construction.

Since the data collection for the research will be done via interviews and the opinions of people are susceptible to change over time and change of context, the research will be true to the present scenario of the study area.

3. Literature Review

3.1. Key Terminologies

3.1.1. Human Environment Relationship

Human-Environment Relationship signifies interactions and interdependencies between human being and their surrounding natural or built environment. Environmental settings can be characterized in terms of their physical and social components; natural and built (or designed) features; objective (material, observable) as well as subjective (perceived, semiotic) qualities; and their scale or immediacy to individuals and group (Stokols et al., 2013). The interaction of human beings with nature is a significant part of the human being's survival over time. Throughout history, human beings have relied on the environment to sustain their lives and maintain a harmonious co-existence with nature. The human–environment relationship is bidirectional, signifying that human attitudes and behavior to nature are the root cause of environmental change, while changes in the environment have the capacity to affect human attitudes and behavior (Liu et. al, 2020).

3.1.2. Indigenous People and Local Communities

International organizations and conventions frequently use the phrase "Indigenous Peoples and Local Communities" (abbreviated "IPLC") to refer to individuals and groups who self-identify as indigenous or as members of distinct local communities (IPBES, n.d.).

Indigenous people as the name suggests are the ethnic communities that trace their ancestry and identify as the original people of a certain region. They are also termed as first people, natives, aboriginals, or autochthonous people (World Wide Fund for Nature, 2019) .

A local community can be defined as a group of people that identify themselves as a collective entity, share an environment, and contribute to a common purpose, space, and culture. Members of the local community often have direct interactions and share a common history, institutions, traditions, language, cultural values, and norms. The local community can possess people of single or multiple ethnicities that are settled in a place or movable society, and either can be long-established or relatively new. For a small community to gain its rights and fulfill its obligations towards the region and its neighbors, it needs some form of political identity (IPBES, n.d.).

3.1.3. Urbanisation

Urbanization is the process of growth of the percentage of population residing in urban regions. In the past, the idea was more centralized towards industrialisation and subsequent economic growth. The fundamental principles of urbanization include a distinct labor division, productions based on technology, trade/services, a certain level of interaction, both spatial and economic, and a high population density/diversity. Towns and rural areas differ from one another not just in terms of the kind of settlements they have, but also in terms of the economic structure, social fabric, and the development of social and political consciousness. Urbanization is a key driver of socioeconomic progress, but it also negatively impacts ecosystems, biodiversity, and resource use, endangering human health through pollution (Sharma, 2023).

3.1.4. Resettlement

Resettlement is the process through which displaced communities are assisted by government or non-governmental organizations are assisted to restore or improve their standard of living (Walelign & Lujala, 2022). Resettlement requires building new livelihood opportunities while also adjusting with the changing social fabric for the settlement.

3.2. Local Communities and Environment

Climate has a direct impact on all our necessities and it is responsible for making our world habitable. Thus, nature continues to be the foundation of human sustenance. Mining, agriculture, tourism, energy, and production are just a few of the sectors that depend on nature to supply the necessary raw resources (Engleton, 2020). Indigenous people and local communities are integral stakeholders of the ecosystem, and they have continued to struggle to preserve their well-being and identity (Geneva Environment Network, 2023). Even though they are distinct from mainstream society in various aspects (economic, cultural, political, and social), they face the same issues when it comes to defending their rights as unique people and, consequently, the environment (Engleton, 2020).

A rising amount of data suggests the evolution of forests as well as people together throughout thousands of years. People planted their preferred trees, burned forests as per necessity for hunting, and maintained the fields by use of forest fallows. woods are not "primitive," but rather a component of the human landscape, and human activity has had a significant impact on the biodiversity of today's woods (McNeely). For these local communities to achieve their fundamental necessities, forest resources are essential. These include offering, supporting, and administering services related to the cultural ecosystem. Forests not only are essential for wood,

and daily lives but also hold a cultural and spiritual significance for these communities and indigenous people (Hassen et al., 2023).

While the local communities also have a part in using the forest ecosystem for their short-term benefits, they also implement sustainable strategies that help conserve the ecosystem in the long term. For example, a group living in forests on Colombia Venezuela border reserve upper watersheds due to their spiritual beliefs which is in a way similar to classified protected areas by the government to conserve the area (McNeely).

Despite their role in the management of natural resources, and protecting forest ecosystems, they lack power and face challenges in participation in decision-making processes about their lives and livelihoods. The indigenous and local communities have an attachment to the forest ecosystems wherein they develop sustainable practices for their daily lives. The utilization of local people can create a significant impact when it comes to the sustainability and conservation of forest ecosystems.

3.3. Infrastructure Expansion and Development

Infrastructure is an important part of economic development and sustainable growth. It facilitates the production/distribution (both goods/services) to markets and technological innovation. For any country, the citizens have the right to proper access to roads, safe drinking water, electricity, and education which are all facilitated by infrastructure (Asian Development Bank, 2020).

Airports, railroads, roads, water transportation, utility services (electricity, gas, water, and sewage), and information and communication technology services are examples of infrastructure systems (ADB, 2012). Infrastructure is the foundation of any industrialized economy's foundation which is essential for daily operations and for constructing society's backbone. Infrastructure has risen significantly in both size and scope as the world's population and numerous regional economies have developed. A large amount of infrastructure is also used to extract natural processes, even though some of it is utilized to carry people and goods (Doyle & Havlick, 2009).

A key requirement for the achievement of development policies is referred to as infrastructure capital, which comprises services that involve transportation, alongside other fundamental necessities including health, communication, water treatment, energy, etc. Infrastructure is crucial because it can have an impact on a variety of economic activities, directly affecting the

potential for production as well as the consumption habits of the public. Infrastructure can facilitate productive differences above all else and promote trade between different regions alongside investments, in addition to these micro-level effects on households (UNCTAD, 2013).

In ancient times, human civilizations settled near rivers for agriculture. As these settlements grew, they formed cities which were the first type of infrastructure as in the case of Mesopotamia which is one of the oldest cities. The irrigation system in the Qin Dynasty of the 3rd century BC is still in use today. In these civilizations, the majority of the infrastructure focused on water supply and security. As ancient civilizations expanded their territories, they built road networks, advanced water supply facilities such as long-distance aqueducts and culverts, and ports for communication and trade facilitation. In the Medieval and Reconnaissance era, for security, defensive walls or ramparts gave rise to “fortified cities” for the expansion of empires with castles. The era saw more advancements in canals, bridges, and public transportation for trade purposes due to the increased advancement of Romans. Some of the infrastructures such as cathedrals, abbeys, and monasteries were also seen on the rise in this era. During the Renaissance period, infrastructure development was oriented towards canals, waterways such as The Grand Canal in Venice; public squares, and bridges (Hideo Nakamura, et al., 2019).

The period of the Industrial Revolution brought significant innovation in terms of infrastructure with the introduction of the steam engine. In the 19th century, railways became the fastest means of communication and transport.

Nepal as a developing country has been lagging in terms of infrastructure development and low GDP. The necessary infrastructure to support Nepal's rapid economic growth has not yet been fully created (Dhungel, 2020). The government has been investing in several infrastructure projects in terms of highways, bridges, hydropower, and many other infrastructure projects.

According to a report by the World Bank (2019), Nepal aims to graduate from a low-income country to a middle-income country by 2022 but most of the citizens do not have access to adequate infrastructure provisions. By closing infrastructure gaps, development can play a significant role in economic growth, employment generation, and efficient movement of goods and services. The Nepalese government's policymakers appear unable to create effective policies for infrastructure development for the desired economic growth (Dhungel, 2020).


 2nd pillar: Infrastructure 0–100	-	51.8 ↑	112	Singapore
Transport Infrastructure 0–100	-	44.1 ↑	91	Singapore
2.01 Road connectivity 0–100 (best)	64.0	64.0 ↑	101	Multiple (3)
2.02 Quality of road infrastructure 1–7 (best)	2.9	31.9 ↑	120	Singapore
2.03 Railroad density km/1,000 km ²	n/a	n/a	n/a	Multiple (24)
2.04 Efficiency of train services 1–7 (best)	not assessed	n/a	n/a	Japan
2.05 Airport connectivity score	27,598.5	43.8 =	75	Multiple (8)
2.06 Efficiency of air transport services 1–7 (best)	3.2	36.7 ↑	131	Singapore
2.07 Liner shipping connectivity 0–100 (best)	n/a	n/a	n/a	Multiple (5)
2.08 Efficiency of seaport services 1–7 (best)	2.0	16.4 ↑	135	Singapore
Utility Infrastructure 0–100	-	59.5 ↓	116	Iceland
2.09 Electricity access % of population	90.7	90.7 ↑	101	Multiple (67)
2.10 Electricity supply quality % of output	22.3	80.9 ↑	119	Multiple (10)
2.11 Exposure to unsafe drinking water % of population	67.0	33.7 ↓	122	Multiple (28)
2.12 Reliability of water supply 1–7 (best)	3.0	32.6 ↑	125	Iceland

Figure 3: Infrastructure Overview of Nepal in global terms

Source: (Schwab, 2019)

On a global scale when we look at Nepal, it ranks 112 among 141 countries on a scale of Global Competitiveness Index in terms of infrastructure development (Schwab, 2019). According to the World Bank (2019), looking at socioeconomic and environmental factors of infrastructure development, some of the key priorities are:

- Labor management
- Labor health and safety
- Land acquisition
- Landslide and Erosion
- Biodiversity
- Waste management and pollution
- Gender equality and social inclusion
- Access to basic services and employment for all

3.3.1. Importance of Infrastructure Expansion

For any country to be developed infrastructures such as roads, electricity, transport, communication, etc. are an integral part as they facilitate economic growth. Infrastructure expansion is essential for trade liberalization as it helps developed countries to integrate with the global market at lower costs. Developing countries fall behind in this because of their insufficient infrastructure provisions. Reducing transportation costs and production costs can enhance productivity as well as production for businesses. The infrastructure can help in increasing the economy of a company as the cost of various operations will be drastically

reduced by the presence of good infrastructure which boosts competition allowing the consumers to get products at competitive pricing (Dhungel, 2020).

Connectivity between regions and people is also one of the important aspects of infrastructure expansion. Infrastructures such as roads, and airports can improve connectivity which can stimulate economic linkage and thus the growth of a country (Bhattacharya et al., 2012). It is also an important tool for human settlement in any region (Song, 2012).

According to a 2006 report on infrastructure in developing Asian nations by (UNESCAP, 2006), for reducing poverty, transportation followed by electricity are the most crucial factors. Greater access to essential factors including resources, technology, and knowledge is provided. With the provision of necessities as well as utilities and enhancement of connectivity (mostly physical) within a country and at an international level, infrastructure also improves socioeconomic and environmental circumstances and facilitates the movement of commodities and services (Bhattacharyay, 2010).

Much evidence also suggests that infrastructure plays a key role in poverty reduction. It provides employment opportunities, better access to services and reduces income inequality (Fardoust, et al., 2010).

3.4. Infrastructure Expansion and Environment

With industrialization and increasing exploitation of resources, built infrastructure has been one of the major drivers of global environmental change and biodiversity loss. A bad infrastructure can be as simple as a miscalculation in choosing locations. Some areas are not suitable for a certain type of infrastructure and some areas can be culturally and historically important to tamper with. Making the right location choices is essential to avoid potential complications, such as environmental challenges, or conflicting land use, which can undermine the overall success and functionality of infrastructure development/project. The examples include untampered habitats such as Alaska’s Bristol Bay or the largest free-flowing rivers in the world, the areas with a set of unique biodiversity like the Borneo/Amazon/Congo Basin, or areas that are being affected by global warming such as the Arctic or coastal region (WWF).

Due to the expansion of infrastructure to global degrees during the 20th century, land use patterns have significantly changed while biogeochemical cycles of different places have been altered and water on the global level has seen changes. Road construction occurs before deforestation, port construction occurs before aquatic invasive species are released from ballast

tanks, and cement production, the foundation of global infrastructure, itself contributes 5% to global anthropogenic CO₂ emissions without even taking into account the significant environmental effects of the roads and dams built with human assistance (Doyle & Havlick, 2009).

The major challenge of mitigating such developments is curbing the adverse impacts of the construction of these large infrastructure projects. Another new challenge is the urban pollution caused by the construction of these expansions (National Planning Commission, 2015). Overproduction and overconsumption are the major drivers when it comes to infrastructure expansion that has an impact on creating discrimination/injustices. In other words, forest ecosystems are being degraded for rapid transport of goods. Exploitative labor is oppressing laborers and the communities are losing their livelihoods and source of living due to their forest dependence (WRM, 2019).

To fill the infrastructure gap, it is essential to develop infrastructure that integrates sustainability, resilience, and inclusivity throughout the entire life cycle of the infrastructure systems, placing people and the environment at the center of decision-making (Soriano, et al., 2022).

3.4.1. Environmental Ethics

Environmental concerns like air and water pollutions; environmental degradation date back to Roman times. However, Environmental Ethics is an emerging philosophy that surfaced during the seventies with the publication of Rachel Carson's *Silent Spring* (1962), followed by the first Earth Day in 1970. Environmental ethics is primarily concerned with the human-to-resource interaction and it also includes a human-to-human ethic. Environmental degradation raises questions about our relations to the natural world, but simultaneously it also raises the question of whether the action of some people should inflict harm on other people.

When defining the scope of environmental ethics, it's vital to consider who and what we have ethical responsibilities or obligations. Trying to explain the obligations, Beatley (1994) defines this scope in terms of biological, temporal, and geographical dimensions. The biological aspect returns us to Leopold's ideas, which raise the fundamental question of whether moral responsibilities transcend beyond the homo sapiens and if other species of life, or the larger ecosystem itself, have inherent value. It brings us to the two essential distinctions of environmental ethics: Anthropocentric and Non-Anthropocentric. An anthropocentric value theory by common consensus confers intrinsic value on human beings and regards all other

forms of life as only instrumentally valuable. i.e., useful only to the extent that they are means of an instrument that may serve human beings. A non-anthropocentric value theory, on the other hand, would confer intrinsic value on some non-human beings (Callicott, 1984).

The temporal dimension investigates whether we owe moral obligations to the current generation or if there are obligations owed to the future generation as well. The geographical component considers the scope of commitments beyond national borders and whether we should consider the environmental consequences and degradations in other communities, states, and countries.

3.4.2. Environmental Justice

The earlier studies on environmental justice saw the inequity in the distribution of environmental costs as the primary focus. The idea focused on how different communities were exposed to different levels of environmental risk. The environmental justice also focuses on indigenous and local community's perspectives on the interplay between humans, nature, and culture. (Schlosberg, 2013).

Numerous research has come to the conclusion that people of color, indigenous people, ethnic minorities, and low-income groups generally bear a heavier burden of environmental exposure due to air, water, and soil pollution brought on by industrialization, militarization, and consumer behavior referred to as environmental racism, environmental inequity, or environmental injustice, among other terms (Schlosberg, 2013). The movement emphasized from the beginning that environmental problems cannot be solved without unveiling the practices maintaining social injustices (Fisher, n.d.).

Later, the work of Julian Agyeman focused on integrating the concept of justice and environment towards just sustainability. It merely reflected the circumstances that many communities faced and broadened the definition of social justice to include environmental disadvantage, a brand-new area of unfairness, misunderstanding, and exclusion (Schlosberg, 2013). One of the concepts of Environmental justice encompasses procedural justice which focuses on decision makers involved in decision making processes. The notion of participation is not taken into account in infrastructure development projects as there is a top-down approach which leads to exclusion of local and indigenous communities (Geschewski & Islar, 2022).

In order to fill the infrastructure gap in terms of environment and minor communities, it is essential to develop infrastructure that integrates sustainability, resilience, and inclusivity

throughout the entire life cycle of the infrastructure systems, placing people and the environment at the center of decision-making (Soriano, et al., 2022).

3.4.3. Climate change

Soriano, et al. (2022) state that there are signs that the geographic distribution of climatic risks within cities is still uneven because the degree to which certain society groups are exposed to and vulnerable to climatic hazards varies depending on their socioeconomic distribution and where they live. Marginalized groups are restricted from exercising their human rights. The ability to cope with and recover from climate-related damages is hampered by inequality, which also enhances susceptibility to such effects (NiBhreasail, 2021). Due to the loss of assets and means of subsistence, this has disproportionate effects on local and indigenous communities, contributing to increased inequalities and a vicious circle of increasing socioeconomic and climate vulnerability (Soriano, et al., 2022).

In developing countries, 30-40% of the population live in informal settlements with less or no access to infrastructure and services. The spatial fragmentation of climate change impacts minorities and local communities in daily life experiences due to flooding, food shortage, diseases due to pollutants, landslides, and displacement of local communities. (NiBhreasail, 2021).

3.4.4. Sustainable Development

The World Commission on Environment and Development strongly supports the concept of sustainable development, and defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43; as cited in Beatley, 1994).

Infrastructure can have cross-sectoral advantages and serves as a foundation for advancements in three areas: economy, society, and environment. All of the social SDGs are delivered based on sustainable infrastructure. One of the main goals of developing infrastructure is increasing public access to fundamental services, and reducing poverty is strongly related to sustainable infrastructure, which combines energy, transportation, clean water, and sanitation services. Infrastructure investments will boost the economy by producing jobs, a new source of income, trade opportunities, and many more benefits. The best possible utilization of local labor/resources can also boost the community's income and can help tackle poverty. Finally, in terms of the environment, it is universally agreed that limiting climate change to any level and

switching to sustainable energy sources are the only ways to achieve the goals outlined in the Paris Agreement on Climate Change (United Nations, 2022).

Initiating sustainability efforts should commence with the local public, where it is essential to evaluate and fulfill the needs, aspirations, and requirements of the local community concerning community development. For the development of the community, nationwide investment policies are crucial. Local public will always be a key component in deciding strategy when it comes to economic growth, social benefit, and utilization of natural resources (Hussain, et al., 2022).

According to Vemuru (2016), sustainable development can play an integral role in the process of resettlement:

- Sustainable infrastructure projects can contribute to medium- and long-term benefits in economic, financial, social, and environmental sectors.
- Sustainable investments for displacement using local authorities for implementations, using government for systems like financing, structures, and institutions.
- Including indigenous and local communities in different procedures including planning, decision-making, and implementation for sustainable outcomes.
- A planning process that considers pre-existing investments/infrastructures for effectively coordinating responses
- Making sure that the activities have a positive impact on basic/higher-level needs, mainly in sectors like health and education.

3.5. Socio-Economic Impacts of Infrastructure Expansion Projects

Infrastructures that are on large-scale projects can be considerably useful in the economic development of a country but these projects have a very high-cost impact on a segment of the population and have a great effect on the locals (Mahmood et al., 2020). Local and indigenous communities face the harshest repercussions from most of the major infrastructure projects. Furthermore, mostly the rural inhabitants tend to bear the negative impact of these large projects carried out for national development. The livelihood of the people in the affected area is adversely affected while they don't gain significant advantages (Suárez et al., 2018). Even though they are one of the significant stakeholders in the process, there is little to no consideration of their position and perspective on such projects. Disappointingly, these communities are sometimes perceived as obstacles or threats to the development process rather

than valued contributors. This neglect of their voices and exclusion from decision-making exacerbates their livelihood and leaves their lives in limbo.

Local communities and indigenous people have a significant influence on at least one-fourth of the global land areas through ownership, management, or use. Although these areas experience slower degradation compared to others, the effect caused by climate/ecosystem alteration has a direct impact on the local population. (Drissi, 2020). These local communities have a sense of identity and community linked with nature which is overlooked in large-scale infrastructure projects.

It is crucial to take input from the local community when it comes to such projects, to understand if locals support the project and how the project is going to impact their socio-economic well-being (Mahmood et al., 2020). The culture, and connection of these local indigenous communities to nature is an integral part of the community's identity which can be lost.

This can be seen in the case of Istanbul city's gigantic "aerotropolis" project which constituted 80% of the forest as a project area. The project saw many protests but, in the end, construction continued as planned which led to Turkish farmers losing their lands for construction (Bridger, 2015). One of the main sources of income in the district of the villages was livestock. 236 hectares used for livestock activities within the project area were taken out of qualifications, affecting the livelihood of the residents (Bayrakdar & Durmaz).

Another example of an infrastructure project is that of Chincero Airport of Peru wherein the airport was proposed in an indigenous town which led to consequences (socio-cultural) on a large scale over the land. Two of the communities never received compensation for their land nor were these communities involved during the process of making decisions. The area was one of the significant traditional places which had witnessed a profound transformation over the years. The communities had a cultural continuity that stood as their identity which was lost along the lands of these indigenous communities (Garcia, 2014). This poses the necessity and validity of the research.

3.5.1. Economic Growth and Development

Infrastructure is a prime element in a nation's development. Every economy requires roads, railroads, and utility networks, and the absence of these services indicates under development and growth constraints. By creating more opportunities for jobs, lowering the costs related to

both transportation and production, creating a connecting medium for markets/facilities that are on an international level, and improving access to all the basic needs/services, infrastructures encourage inclusive growth. It lowers poverty (ADB, 2012).

Furthermore, the development of infrastructure holds a high potential for boosting trade and investments within different regions, which can create regional markets that contribute to accelerated growth, ultimately reducing poverty. It also helps in facilitating commercial activities alongside attracting investments on a local and international level. Development in infrastructure can effectively uplift supply diversification and economic convergence within regions while stimulating increasing demand (UNCTAD, 2013).

3.5.2. Income and Employment

Investing in infrastructure increases the possibility of enhancing productivity and it is also expected to back the economic growth when it comes to developing countries with insufficient infrastructure. Consequently, development in infrastructure can be considered a major component in the public policies of these nations. This is clear in the active promotion and support provided by several international organizations, like the OECD and the World Bank for encouraging infrastructure development in developing nations (Gaal, 2017).

There is strong evidence that suggests there are beneficial impacts of infrastructure on development such as production and productivity, reduction in poverty and inequality, labor market results, human capital accumulation, and trade (Vagliasindi & Gorgulu, 2023).

The construction and maintenance of the infrastructures can contribute to increased household income, a reduction of unemployment, and poverty alleviation (Renaissance Consultants CC, n.d.).

3.5.3. Infrastructure Development and Access to Services

The reach as well as the quality of essential services including water, electricity, sanitation, communication, and transport has a huge impact on the standard of living and economic advancement. Through the expansion of infrastructure, communities gain improved access to essential services.

Many countries are focusing on the infrastructure's sustainability for providing long-term benefits to people alongside community development. A major factor for developing any community including aspects like growth, productivity, and so on is the socio-economic factor. According to Riva et al., the use of electricity is linked to several aspects of socioeconomic

growth, including income-generating activities, production as well as an increase in profit. This links the use of electricity to improving different aspects like health, education, economy, and shared values (Hussain, et al., 2022).

A major example is an improper and substandard road, which increases transportation costs and creates challenges in accessing quality inputs while creating limitations on local market utilization. This can escalate expenses and affect economic activities — confined to the selling of goods, procurement of consumer items, and creation of off-farm employment opportunities. Infrastructure is a major contributor to the reduction of poverty as it facilitates development and amplifies the effectiveness of different measures that are aimed at enhancing the underprivileged groups' access to human, financial, social as well as natural resources. Its impact extends across both social as well as economic domains. Lack of proper transportation hinders marginalized communities from selling their products in the market. Studies have shown that in India alone, roads contribute to an increase of 7% in overall rural output (Gaal, 2017).

3.5.4. Urbanisation and Changing Social Fabric

Local cultures and customs may be impacted by the influx of new residents and industries. The preservation of indigenous people cultural history might become more difficult as outside influences have greater power (Garikipati, 2002). Increased social connections and cross-cultural exchanges might result from the influx of new residents into a community (GOECE, 2018). This can encourage cultural interaction and diversity, but it can also lead to tensions or disputes because of divergent norms, values, and expectations. The movement of population to different areas will lead to an increase in population in the nearby areas. Unequal distribution of economic impacts on the new residents could lead to economic disparities and social inequality (Mookerjee, 2003).

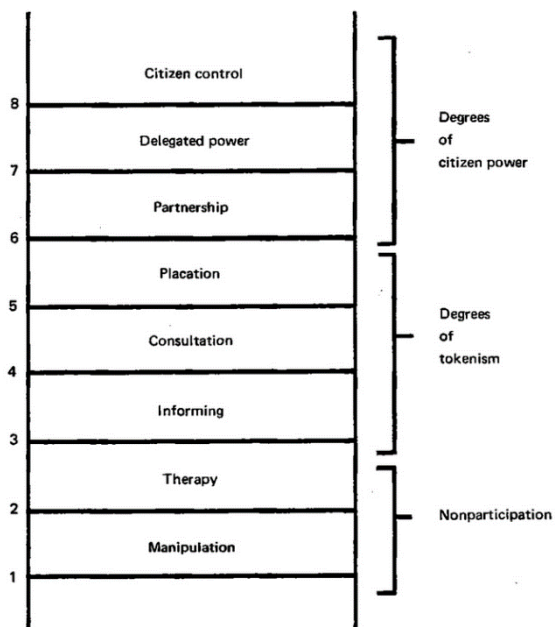
3.5.5. Displacement and Marginalisation

The effects of displacement include but are not limited to, local populations who run the risk of poverty and divisions. Due to this socioeconomic division, the community may be more susceptible to cultural transformation. Additionally, a community is more likely to oppose an infrastructure project that comes at multiple costs which thereby affects the project's budget and schedule. A mega project causes displacement which disrupts a local community's way of life (National Planning Commission, 2015).

For many people, the emotional pain of being uprooted from their homes and lands will undoubtedly be a factor. Dispersion of family and kinships as a result of displacement may lead to weakening of culture and social structure. Indigenous groups and local communities, particularly the elderly, women, and children, may experience this more.

3.5.6. Citizen Participation

As per the World Bank (1996), participation refers to an approach through which involved parties influence and jointly manage development initiatives, decisions, and the resources that



impact them. Slocum et al. (1995), state that the involvement of citizens serves as a mechanism of articulation of public/community interest in development schemes, influencing both the public and other segments. Public participation helps in cultivating a sense of ownership in the process of planning/development and involves the public in decision-making processes. Additionally, it encourages inclusivity, responsibility, and transparency in decision-making.

As we climb the ladder of citizen participation, informing is the time when people are made aware of the process. Although this is a crucial first step toward representation, information

Figure 4: Ladder of Sherry Arnstein's Citizen Participation

alone is not enough to guarantee diversity.

Considering the ideas of the public is a crucial step toward full participation, but if there is no guarantee that the opinions will be taken into consideration, there is little possibility for improvement.

The Ladder of Citizen Participation, like any model, framework, or description that makes things easier to understand, can only explain so much. According to Arnstein(1969), the ladder does not examine the "barriers" to meaningful public participation and empowerment. As a model of public engagement, citizen control may seem to be at the top of the heap and offers several advantages, but Arnstein identifies some potential issues:

“It promotes separatism, causes the balkanization of public services, increases costs and decreases efficiency, enables individuals from minority to access opportunities and show

disregard for the ones with fewer resources, which contradicts the merit-based systems and professionalism, and ironically it includes all of these things.”

3.5.6.1. Role of Participation in Development Projects

Governments often overlook the importance of engaging with these communities and seeking their input on infrastructure projects. It is much rarer for governments to approach these communities to listen to their perspectives what they think about infrastructure as well as their surrounding environment, that is, what is truly necessary to enhance their lives and strengthen the foundations of their well-being – for example, with regard to the economy, health care, education, transportation, energy and communication. By actively involving these communities in decision-making processes, governments can ensure that infrastructure initiatives align with their aspirations, contributing to meaningful improvements in their quality of life. Rarely there is genuine engagement and empathy from governments towards the concerns of these communities. It is essential for governments to proactively learn about and comprehend the problems faced by communities, actively address their demands on the basis of their realities (WRM, 2014).

3.6. Policy Review

3.6.1. Constitution of Nepal 2015

The Interim Constitution of Nepal (2007) guarantees that “The State shall not discriminate against citizens on grounds of religion, race, caste, tribe, sex, origin, language or ideological conviction or any of these. However, the constitution has not prohibited discrimination against communities that are marginalized both socially and economically. The constitution has consolidated the right to housing under Article 37 under fundamental rights and responsibilities. A citizen’s right to seek suitable housing has been guaranteed by this article. In addition, the Constitution of Nepal recognizes the right to social justice, peace, housing, and security as fundamental rights. Also, the law safeguards the life, liberty, property, and equality of every citizen, prioritizing the independence of Nepal, sovereignty, autonomy, and territorial integrity. To establish a welfare state that aligns with fundamental rights, human rights, proportional inclusion, gender equality, and participation.

The state's political goal is to improve the federal democratic republican system in order to secure the enjoyment of democratic rights by incorporating the idea of proportionality into the governance system based on local autonomy and decentralization.

3.6.2. Housing Act 2018

It aims to make proper arrangements for a safer housing facility for homeless Nepali citizens. It is oriented towards an ownership-based model. It also includes rental housing with a glaring gap of absence of required provision. Section 7, those housing facilities are provided to people lacking a house or land under one's family. To make housing affordable, housing should be understood in terms of dimensions like habitability, availability of services, materials, facilities & infrastructures, Accessibility, Location, and cultural Adequacy (Act, 2018). This act does not create specific obligations to prevent homelessness but it can address the underlying cause to have a proper assessment of situations & responsibilities to the situation. The recommendation for the act is to amend to improvise the problem of homelessness, specifying measures by the state to address housing needs & to create statutory obligations for all tiers of government. The other recommendation is to amend to clarify the roles & responsibilities of each tier of government. The other recommendation is to provide immediate accommodation to homeless people until permanent housing facilities are provided.

3.6.3. Gender Equality and Social Inclusion Policy (GESI) 2021

This policy targets to implement measures promoting gender equality and social inclusion across three domains, targeting vulnerable groups, women, followed by excluded, and the poor. The objectives consist of increasing access to services/opportunities, amplifying their unheard voice and participation, and contributing to addressing discrimination, mindsets, norms, and policies responsible for removing barriers. "Excluded Groups" as per guidelines are the individuals including women, Dalits, indigenous groups, Muslims, Madhesi, disabled people, people in remote areas, and elderly that have been excluded due to economic status, caste, gender, disability, and geographic reasons. To ensure the identification and consideration of the diverse needs and concerns of minorities, the policy strongly emphasizes enhancing their ability, meaningful participation, and involvement in governance/decision-making processes.

3.6.4. Land Acquisition Act 1977

This policy facilitates laws related to land acquisition. The policy was partially amended in 1933. The government may acquire land anywhere for the purpose of public works by paying the requisite compensation to its owners, according to Section 3 of the Act. According to the Act, the government must take into account compensation when acquiring land for the benefit of the local population. The Compensation Fixed (Determination) Committee was formed in Article 12 as the organization for fixing compensation unit price.

3.6.5. Land Acquisition, Rehabilitation and Resettlement Policy (LARRP) 2015

This policy facilitates to acquisition of land for an infrastructure project. This policy is provisioned only when the installation of transmission lines, telephones & underground drinking water pipelines affects livelihoods and shall be entitled to compensation. The expenses related to land acquisition; compensation & implementation shall be added to the project cost. The team of the 5-member committee shall play a role in determining & deriving compensation amounts close to the market rate. The people not satisfied with the land acquisition process can lodge complaints at the project office or hearing office at district & regional level or appellate court. The key provision for it is to ensure the livelihood of project affected person or household, to emphasize the project development agency for meaningful consultation, accomplish compensation payment & efforts, land acquisition through negotiation, and land-based compensation & resettlement (Commission, 2015). The primary initiatives aimed at improving socio-economic development for affected groups need to be strengthened. Also, there should be subsidized rates for individuals affected by the project. For the physically displaced groups, there should be provision of additional assistance like residential, goods, and relocation. House rental etc. Also, employment opportunities & livelihood restoration to project-affected livelihood should be ensured & project development agency should ensure the allocation of resources.

4. Case Study

4.1. Resettlement in Narmada River for Sardar Sarovar Project

4.1.1. Background

Narmada is India's fifth-longest river while ranked 1st in India's west-flowing rivers travelling 1312 km to the sea and drains in the states of Madhya Pradesh, Maharashtra, and Gujrat. Due to international water disputes, the river is virtually untapped; on average, 32 MAF (million feet) of water flows into the sea each year from the river.

The Sardar Sarovar Project was an inter-state project for providing facilities such as drinking water, hydropower, and irrigation in the 3 states mentioned above, it entails building a dam, canals, and reservoirs on this river basin. The project was initially proposed in the 1960s, but due to probable environmental and social effects, including the eviction of thousands of people from their homes and lands, it had been subjected to lengthy delays and controversy. Construction on the project started in 1988 after it was ultimately approved in 1987. The heated discussion on the Saradar Sarovar being Gujrat's lifeline was the most debated concept (Mookerjee, 2003).

4.1.2. Socio Economic Impacts

The goal of the project was to offer residential water to all villages in North Gujarat impacted by salinity and fluoride, as well as the Saurashtra and Kutch regions. Approximately 18.45 lakh hectares of land were to receive irrigation facilities as a result of the project, which in turn would improve agricultural output and income.

According to official documentation, the initiative led to the displacement of 22000 families originating from 245 villages. The majority, are the tribal "Adivasi" individuals. These tribal members, who were previously residing in the hills, will undergo relocation to the plains and will be integrated into communities accustomed to conventional rural culture contributing to 2/3rd of people being displaced (Mookerjee, 2003).

According to Garikipati (2002), some of the major socio-economic impacts on the displaced populations due to resettlement include:

- Moving can result in a loss of employment opportunities, social upheaval, and a drop in the displaced person's standard of life.

- Those who have been forcibly relocated can see a decline in their social standing and be required to pursue novel and unusual means of subsistence.
- Displaced people may at first exhibit risk-averse behavior and stick to established customs and social groups, as they reestablish themselves economically and socially, they exhibit greater risk-taking behavior. This might result in the breakdown of community organization and leadership patterns that have previously constrained individual initiative.

The projects had a profound effect on both humans and the natural environment. It inevitably disrupted the human and environmental conditions and necessitated the need for identification and management of producing a new ecosystem. The project has, however, drawn a great deal of criticism due to its effects on the environment, the resulting human displacement, and the insufficient resettlement and rehabilitation of the impacted community (Shelat, 2000).

One of the major impacts also included displaced communities experiencing traumatic relocation wherein the community is forced to be evicted.

4.1.3. Resettlement Policy

As per (Garikipati, 2002), the policy for resettlement aimed to allocate each displaced family, five acres of land, along with a housing site featuring temporary accommodation. The policy also included a resettlement grant alongside other fundamental amenities, which varied based on the settlement size. Even though the policy was formulated without consulting the parties affected, it received commendation as the best scheme for resettlement in India and was regarded as “most favorable in any developing country”.

(Shelat, 2000) states the strategies made by the government on the matter of resettling displaced people can be briefed as:

- The families that have suffered the impact will be encouraged to relocate to Gujrat as the NWDT award grants them the right to possess agricultural land in the command area of the SSPO.
- Complete compensation will be provided for the submerged agricultural land, following the provisions provided by the Land Acquisition Act 1894, or an alternative option of receiving land in exchange, based on the preference of the displaced individual.
- Each family, regardless of their land ownership status, will receive 2 hectares of irrigable land. The benefits extend even to the encroachers on government/forest land.

- Every adult son of the outsees, agricultural laborers, encroachers, and co-sharers, who are at least the age of 18 by Jan 1, 1987, will be regarded as an independent family and will be eligible for receiving land of 2 hectares.
- Complete compensation will be provided to existing houses that are being submerged. The dismantled parts of the houses will be transported free of cost.

4.1.4. Drawbacks of the Resettlement Policy

As per initial development models, the projects were formulated with an emphasis on improving economic growth and capital generation. The projects followed a top-down, trickle-down, blueprint-oriented strategy, often neglecting subsistence and traditional sectors including production as well as social support.

The paper by Mookerjee (2003) reflects the thought of Medha Patkar who was an active member in the opposition to the project believed. In her interview with Kothari in 1997, Medha Patkar, the leader of the NBA justified their complete opposition to the SSP. They started perceiving the “bigger picture”, which led them to the conclusion that the SSP represented yet another form of development that was both unsustainable and inequitable. Despite Gujrat adopting a liberal policy, states like Madhya Pradesh and Maharashtra did not follow suit. This difference makes the supposed option for outsees to resettle in their state essentially meaningless, as they are compiled for settlement in Gujrat due to its better resettlement as well as rehabilitation policy. Also, only those displaced by reservoir submergence are eligible for benefits, while those displaced due to the construction of the Kevadia colony and those who were displaced for the main canal from the dam are not provided any benefits. Patkar also presented an argument that their belief in the inadequacy of resettlement policies was justified, as Madhya Pradesh had yet to provide evidence that it could offer adequate land for resettlement.

Some of the major drawbacks included:

- Madhya Pradesh did not show where all the displaced people would be relocated to which backed up inadequate resettlement planning.
- Environmental issues were not addressed adequately.
- Inadequacy of compensation, lack of transparency in the resettlement process, and discrepancies in land allocations.
- Unequal distribution of economic impacts on the displaced families.
- Lack of adequate compensation for communal resources including cattle grazing lands.

5. Study Area

5.1. Introduction

Nijgadh Forest, located in northern part of Bara district in Madhesh Province is the last remaining patch of Charkose Jhadi in the Eastern Nepal. is a home to protected sati sal trees (some of which are nearly 400 years old), around 500 species of birds, 37 mammals, 13 reptiles/amphibians and 8 species of fishes. IUCN listed this area as an ‘environmentally sensitive zone’ in 1994.

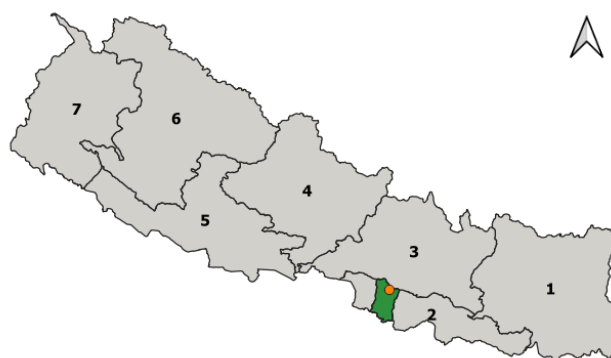


Figure 5: Map of Nepal showing study area

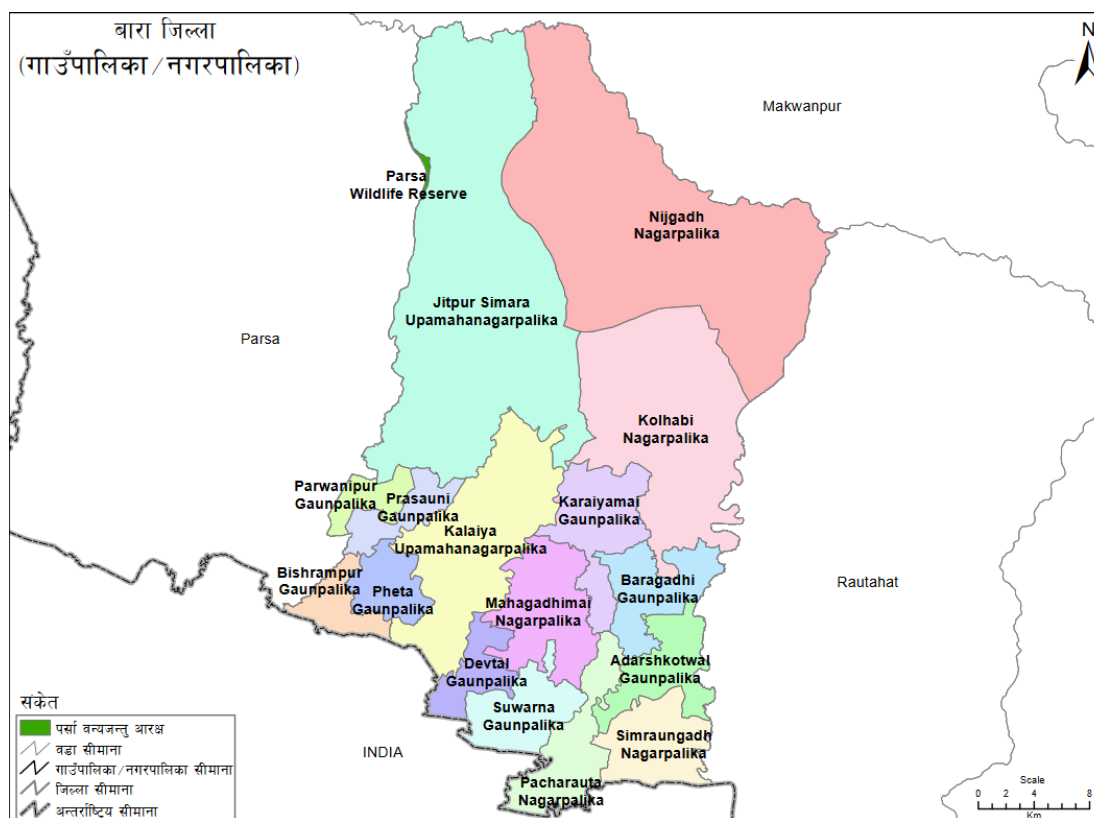


Figure 6: Bara District with all the municipalities

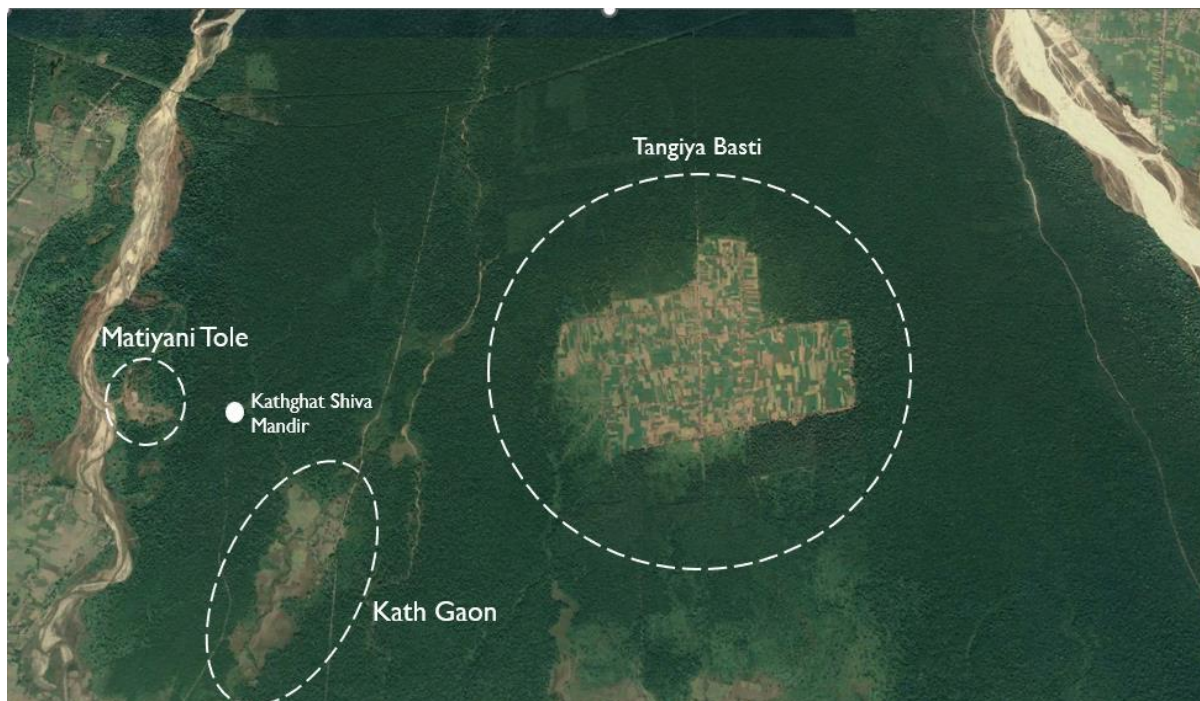


Figure 7: Municipalities showing the settlements

The district consists of 2 sub metropolitans, 5 urban municipalities and 9 rural municipalities. Among these, our study area lies in Kolhabi Municipality and Jitpur Simara Sub Metropolitan. The forest is in immediate proximity to Parsa National Park, which is a forest corridor for significant wildlife like tigers and elephants, while also hosting a rich biodiversity. The entire area is blanketed in dense forests of Shorea Robusta trees, also known as Sal or Sakhuwa (Prasain & Pradhan, 2022). On the North of the forest lies the East – West Highway, Pasaha River on the West and Lal Bakaiya River on the East. The forest area lies in the Bhavar tracks, a delta dry fan mixed with some course adjacent to the Siwaliks. The minimum and maximum temperature of the study area during June is around 28-29°C whereas in December is around 15-16°C (GOECE, 2018).

5.2. Settlements

There are many settlements and communities that live in and around the forest. For the research, the study area lies around three settlements in and near the Nijgadh forest: Tangiya Basti, Kathgaon and Matiyani Tole. These are the three communities that will be focused on



during this research.

Figure 8: Tangiya Basti, Matiyani Tole and Kathgaon

Tangiya Basti lies under Ward no. 16 of Jitpur Simara Municipality. It is a compact settlement with 1476 households. While basti translates to ‘settlement’ in Nepali, tangiya points to the origins of the settlement as it is derived from taungya, a Burmese term (taung = hill and ya = cultivation) that describes a type of shifting cultivation in agroforestry (Bhusal, 2010). Tanguya system was introduced around 1970s in Nepal among which Tangiya basti were among the first to follow this system.

The settlement was initially resettled by the government during 2032 BS for plantation program under the governance of His Majesty Mahendra Bir Bikram Shah Dev. The households were brought from mountain areas, especially the victims of disasters and landless farmers to grow other species of trees such as Sisau, Teak, Masala etc., and look after them. Once the trees were big enough, they shifted to another place within the forest itself for plantation. That is how the settlement ended up in the current area. But the abolition of taungya in 1990s left these farmers

landless, yet the government didn't take proper measures to look into the management of the settlement. After which, due to lack of government's interference, they settled permanently living in huts in the area (Geschewski & Islar, 2022).



Figure 9: Tangiya Basti 2010

During Maoist insurgency, the settlement was a hiding spot for Maoist people. During this period, the people were given confidence by the Maoists that since government resettled them, and since they are also the citizens of the country, they should live here comfortably. After this they would get wood from the forest and construct proper houses for themselves in their own land. It is prominent that the settlement has grown over the years and more people have arrived to live here since then. Many people living in the settlement also invited their relatives to live in the settlement due to which there has been an influx. Also, the sons and grandsons of the same households also have separated from the families and built new houses in the settlement itself which has also led to the growth of the community. These 1476 households do not possess the land ownership of the area.



Figure 10: Tangiya Basti, 2017



Figure 11: Tangiya Basti, 2020

Looking at both the sections, it is clearly visible that there has been significant rise in houses from 2008 – 2020, wherein 2008 section, the houses seem dispersed, 2020 snippet shows close compact houses in many sections of the basti.



Figure 12: Section of Tangiya Basti, 2008



Figure 13: Section of Tangiya Basti, 2020

Kath Gaon lies under Ward no. 8 of Kolhabi Municipality. It is a settlement with 150 households. The settlement is tribe of indigenous Tharu community who started living in the area since the period of Jung Shamsheer Rana. Anup Subedi, ward chairperson stated explaining the history of Kathgaon, “Chaudhary people ran during Rana period from Kathmandu and came here. They constructed the Katghat Shiva temple, near which there was an old house, where they stayed hidden. The settlement has lived there since the period of Jung Bahadur Rana around 1800s.



Figure 15: Kath Gaon, 2008



Figure 14: Section of Kath Gaon, 2008

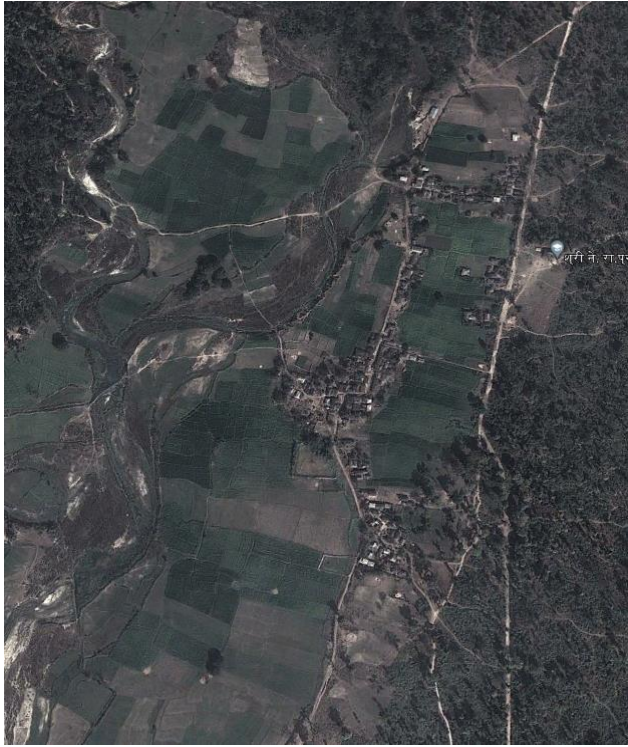


Figure 17: Kath Gaon, 2013



Figure 16: Section of Kath Gaon, 2013



Figure 18: Kath Gaon, 2020



Figure 19: Section of Kathgaon, 2020

It can be seen from the time series of Kath Gaon that there has been certain urban growth in terms of housing which is dispersed in 2008 while seems more clustered in 2020.

Matiyani is a newly established settlement of 39 families of Dalits who have migrated from different places in 2061 BS mostly for the land availability. Most of the people in the settlement have migrated from places within the Bara district such as Sajhauri, Kohalpur, Sukhi Patra, Dumariya, Kalaiya, Gadhimai etc.



Figure 20: Matiyani Tole, 2008



Figure 21: Matiyani Tole, 2014



Figure 22: Matiyani Tole, 2020

5.3. Rivers

There are two major rivers near the Nijgadh forest that are on the East and West end of the forest. The Bakaiya River is a part of the Lal Bakaiya watershed which falls in Nijgadh Municipality. The river is known to have floods in the monsoon and has water in the drier season as well. On the other hand, Pasaha river has almost no water in dry season and a small stream flowing in monsoon.

An interview with Raju, an auto driver, expressed his views on Pasaha River while passing through the dry Pasaha River “The water in Pasaha river started drying up once they excavated Ratomate hill 10 years ago. After which, Tamang community started living and throw wastes which blocked the way and further reduced the flow of the river.” Earlier, the river was the main source for irrigation for nearby settlements.

During the monsoon season, both rivers carried a lot of sediment. On the riverbed, sediment is deposited, as a result, river bank erosion is significant. Due to which, as the part of construction of airport, river training works are also being done. The river training has been completed in Pasaha river and is ongoing in Bakaiya River.



Figure 26: Pasaha River



Figure 27: River training completed in Pasaha



Figure 24: Bakaiya River



Figure 25: Bakaiya River in monsoon



Figure 23: River training ongoing in Bakaiya



6. Field Observation, Study and Analysis

6.1. Physical Infrastructure

Tangiya Basti, Kathgaon and Matiyani Toles are located to the west of the Nijgadh Municipality and North to the Kolhabi Municipality.

6.1.1. Roads

All the major roads in the Tangiya Basti are gravel roads. There is a main road that connects from East West Highway through forest to the Tangiya Basti. The roads get waterlogged in rainy seasons and lead to minor accidents. Most of the internal roads are 2.5-3m.

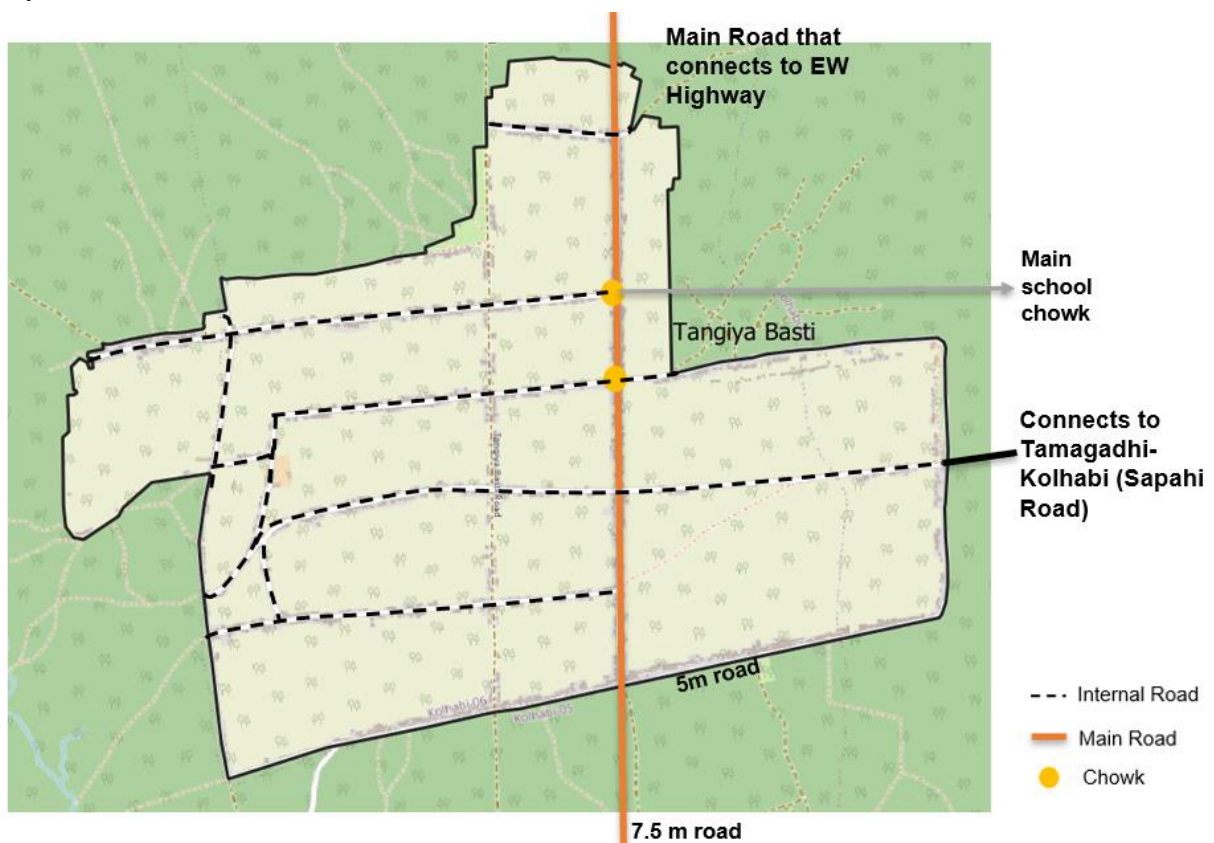


Figure 28: Roads in the Tangiya Basti



Figure 31: Main Road that connects to EW highway



Figure 30: Internal Road that goes to Public School



Figure 29: Main School Chowk during rainy season



Figure 32: Main Road that goes to Main School Chowk



Figure 33: Roads in the basti

Kathgaon

The main roads in the settlement are gravel roads, but internal roads are earthen roads. The main road that leads to the settlement, Ganj Bhawanipur Road (6m road) – 4.87kms from the EW Highway (17 kilo chowk) to Kath Gaon. Due to internal roads not being properly constructed, it gets difficult to use public transport in rainy seasons. Many of the internal roads are not in good condition.

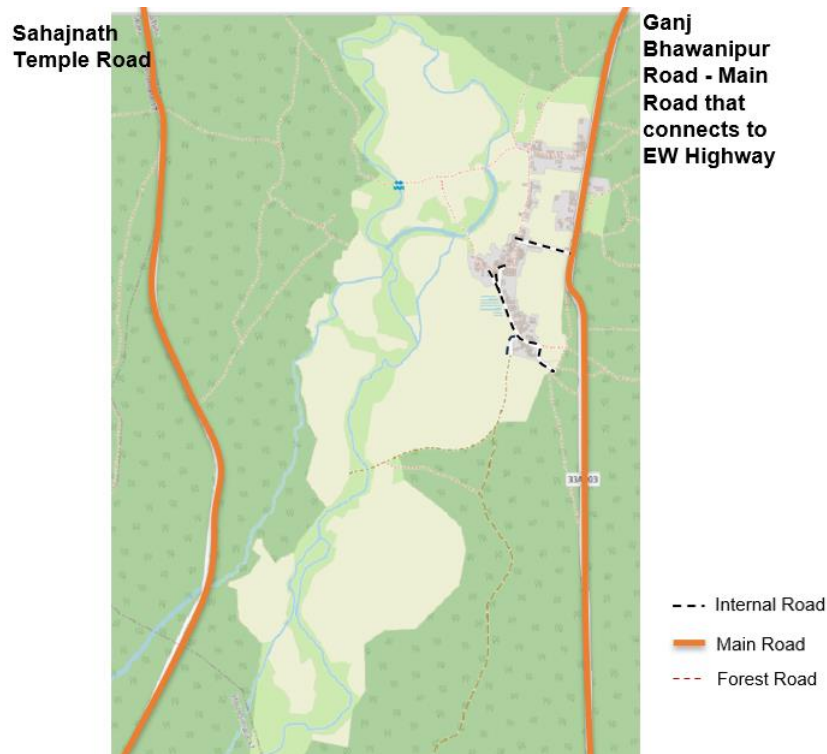


Figure 34: Roads in Kathgaon



Figure 35: Internal Roads of Kathgaon



Figure 37: Ganj Bhawanipur Road



Figure 36: Internal Surveyed Road in Kathgaon

Matiyani Tole

There is a main road in Matiyani Tole around which all the houses of Matiyani Tole are dispersed in, there are no internal roads in the settlement.

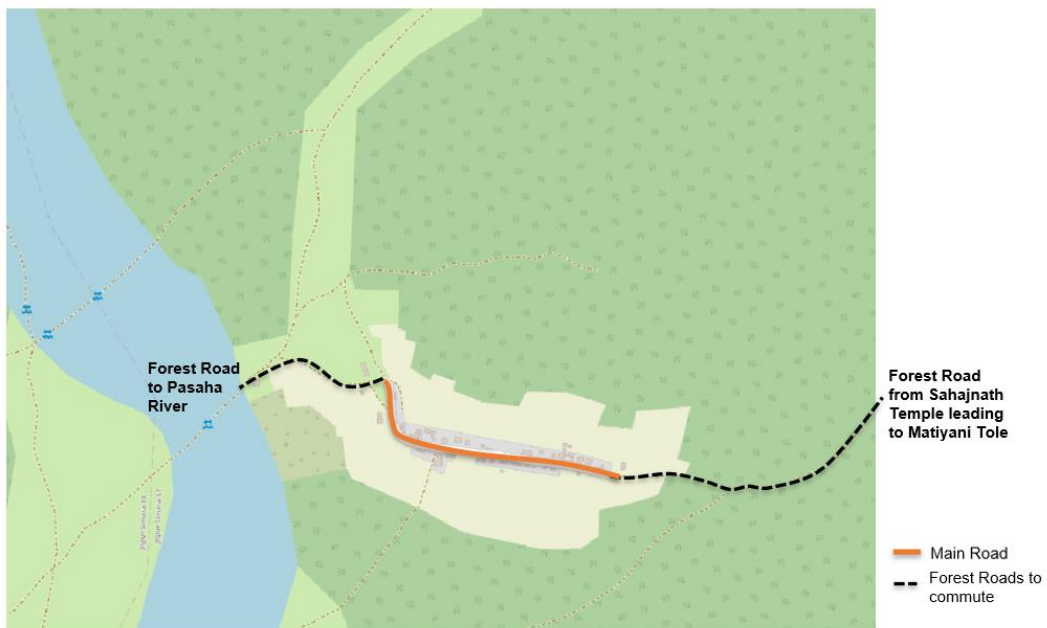


Figure 38: Roads in Matiyani Tole



Figure 39: Main Road in Matiyani Tole



Figure 40: Forest Road from Sahajnath Temple that leads to Matiyani Tole

6.1.2. Transport

Tangiya Basti

The settlement is located approximately 8.2km from Nijgadh Bazar (15 mins) and 16.7km (30 mins) from Kolhabi. The only form of public transportation available from the settlement is Auto and Vans which are run by the local people from the settlement. They usually charge Rs. 100 to go to either Nijgadh Bazar or Kolhabi. The residents who do not own private vehicles sometimes need to wait for the auto to fill up with 5-6 people which can also lead to a waiting time of an hour.

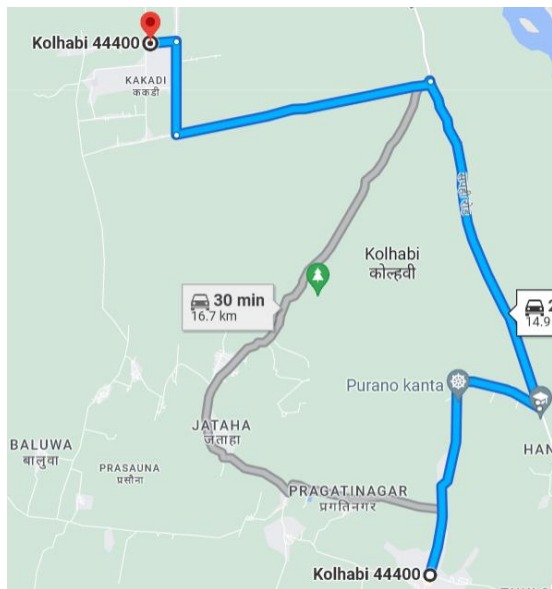


Figure 42: Distance to Kolhabi Bazaar

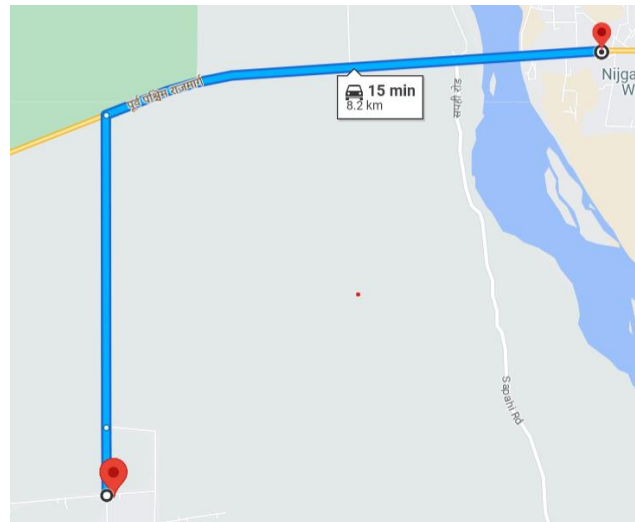


Figure 41: Distance to Nijgad Bazaar



Figure 44: Autos waiting in the Main Chaur



Figure 43: Vans as public transportation

Kathgaon

The settlement is located approximately 13.1km from Nijgad Bazar (17 mins); 6.1km from Madhuwan Bazar (13 mins) and 14.8km (31 mins) from Kolhabi. There is a bus that comes to the settlement around 9-10 am which goes to Birgunj and returns around 3-4pm. Except for that are no other public transportation available in the settlement. While coming from nearby towns, the people reserve autos which charge around Rs. 500 to the settlement. There is an auto driver who resides in the settlement who is called in need of any transport.

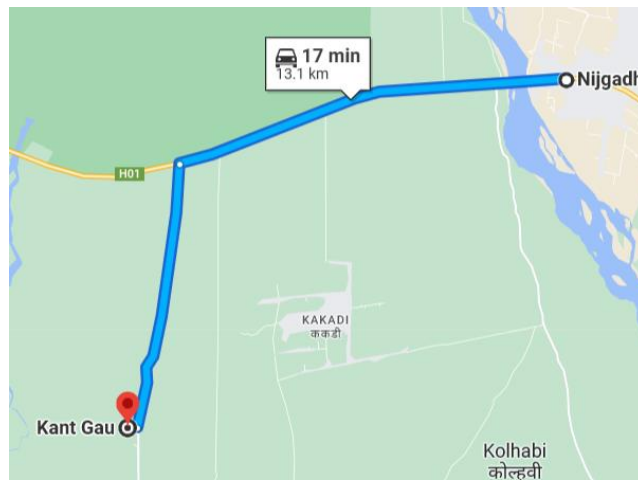


Figure 45: Distance from Kath Gaon to Nijgadh Bazaar

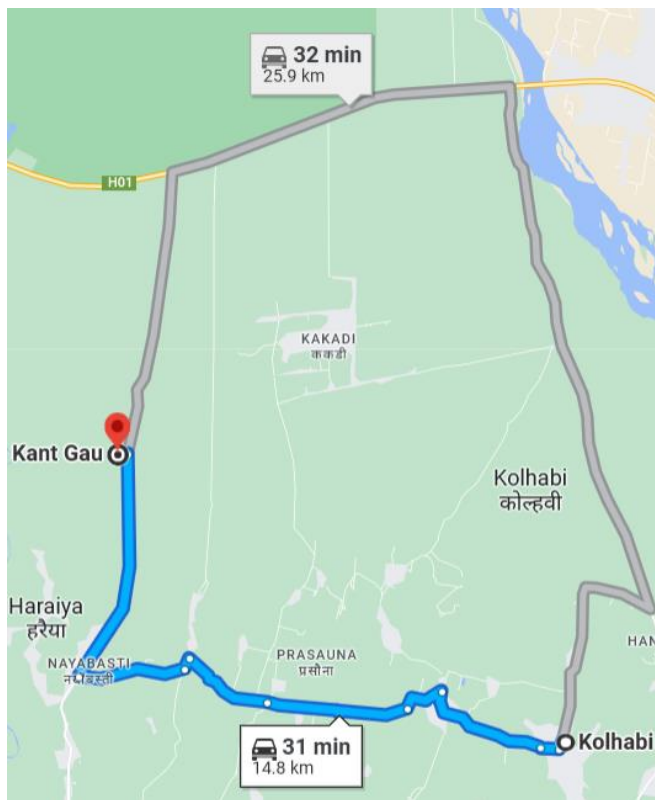


Figure 47: Distance from Kath Gaon to Kolhabi Bazaar

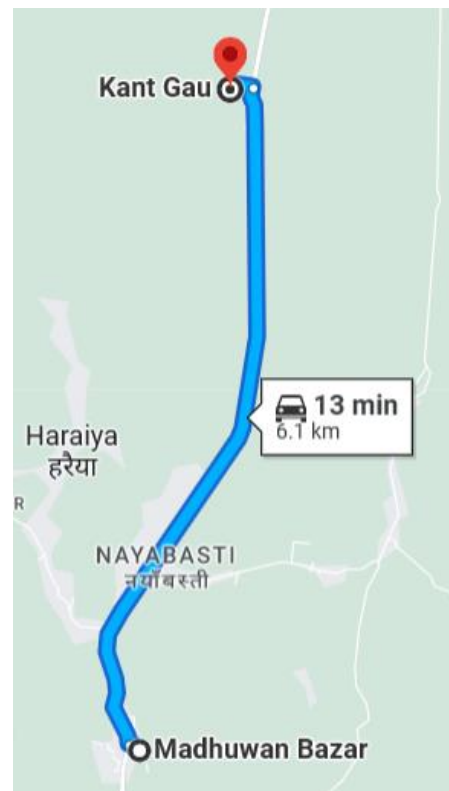


Figure 46: Distance from Kath Gaon to Madhuwan Bazaar

Matiyani Tole

There is no public transportation available from Matiyani Tole. People need to walk to Sahajnath Temple to get a bus that travels to and from Kalaiya Birgunj or autos from the area. But in the temple area, autos are only available until 2:30, if past that, people need to walk till the entrance of the Sahajnath temple or to nearby areas.

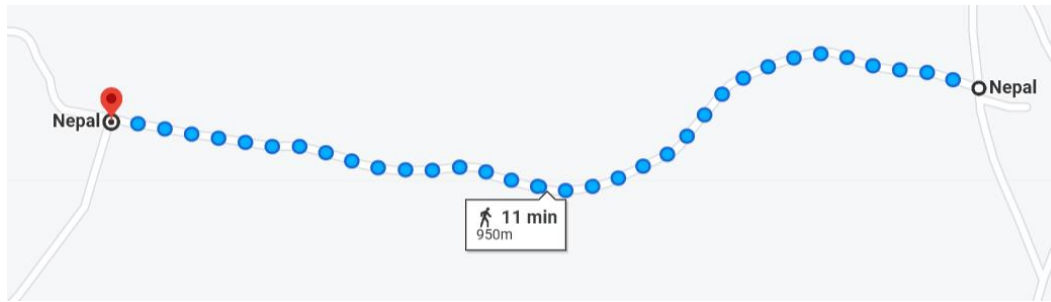


Figure 48: Walking Distance from Matiyani Tole to Sahajnath Temple

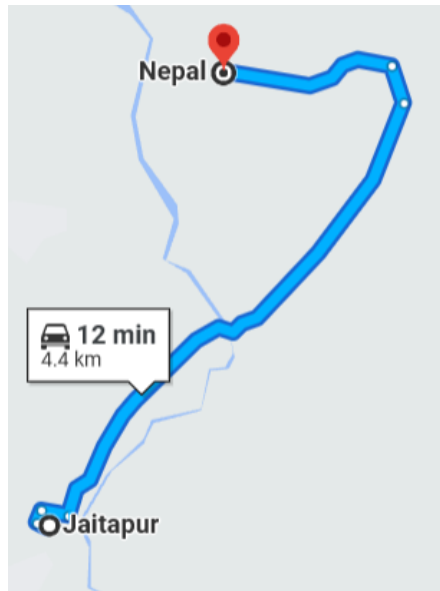


Figure 50: Distance from Matiyani tole to Jaitapur



Figure 49: Distance from Matiyani tole to Madhuwan

6.1.3. Waste

In all the three settlements, most of the people compost the biodegradable waste such as fruits, vegetables waste etc. and use as manure for the agriculture. Rest of the plastic waste is burnt in most of the houses. In Tangiya Basti, for liquid waste, 39% of the households of the 18 respondents have septic tanks whereas 61% of the respondents throw the waste water in the fields.



Figure 51: Wastes thrown in the fields



Figure 52: Plastic wastes are burnt

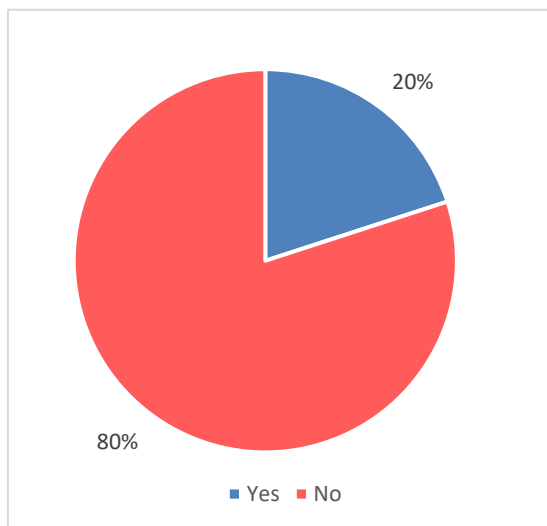


Figure 54: Septic Tank in Matiyani Tole

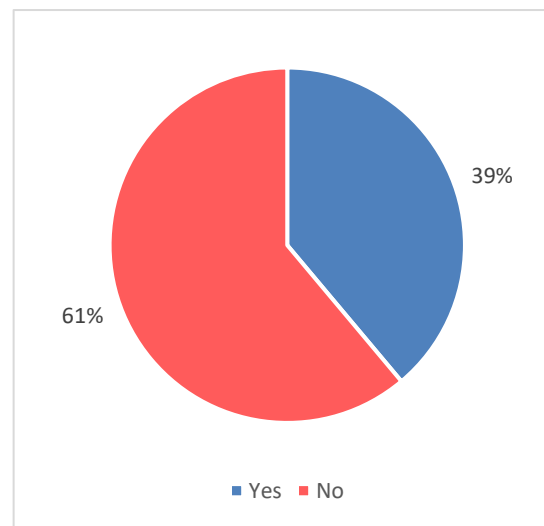


Figure 53: Septic Tank in Tangiya Basti

6.1.4. Water Supply

Tangiya Basti

The main source of water supply in the settlement is Tube well and deep boring, both being ground water sources.

The deep-water boring has also been installed by the community members themselves by collecting money in groups but an in an interview with Ramesh, Focal person Authority of Jitpur Simara mentioned that government has made provisions of boring if people have requested. Recently, households have installed piped line where in pipe was provided by the ward office while all the laying work was done by the ward members itself. But still in some

of the houses, deep boring and piped lines are not present so they still rely on community tube wells for water supply.

Initially, before tube wells, they used to go to collect water at the stream 9 no. khola which used to pose a threat to safety as well.



Figure 55: Community Tube wells in the settlement



Figure 56: 9 no. Khola

Kathgaon and Matiyani tole

In Kath Gaon and Matiyani Tole, the major source of water supply is tube wells in their houses. The 9 no. khola also passes through Kath gaon and is referred to as Kath khola which is used as water source for farming. The water in river has depleted in many areas over the years.

Out of 18 respondents of Tangiya basti, 3 respondents still used community tube wells while others had already deep boring in their homes.



Figure 57: Tube well in Kath Gaon



Figure 58: Kath Khola



6.1.5. Electricity and Communication

Most of the area in all the three settlements do not have access to network. It is very difficult to get any network in the area because of being encroached from forest on all ends. But there is WiFi in most of the houses in the Tangiya Bati and some of the houses in Kath Gaon. Not having network is bothersome as in case of emergency, it is difficult to call hospitals, or any necessary services.

For the electricity, the Tangiya Basti has access to electricity since last Dashain, before that most of the houses had solar panels. In Kath Gaon, the settlement had electricity. Matiyani Tole still does not have electricity. Only some of the houses in



Figure 60: Solar Panels in Tangiya Basti



Figure 59: Solar Panels in the main road of Matiyani Tole

Matiyani Tole have solar panels while rest of the houses still live in darkness. Out of 15 respondents, 8 had solar panels while 7 of them still had no access to electricity. For major road, there are three solar panels in the Matiyani Tole.

There are high tension lines passing through the forest along the Gunj Bhawanipur Road of Kath Gaon which could lead to forest fires as well as pose threat to human as well as wildlife.

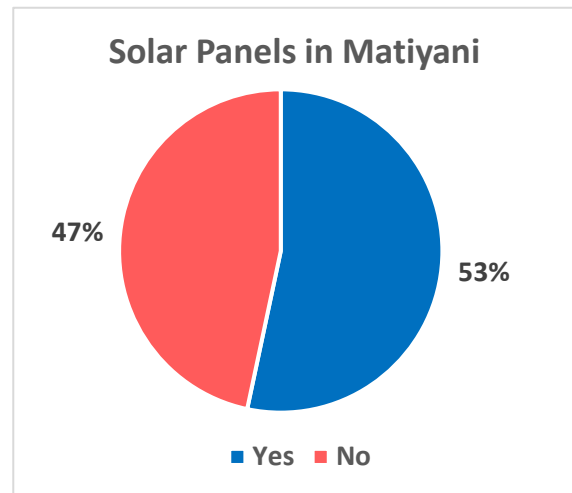


Figure 61: Solar Panels in Matiyani Tole



Figure 62: High Tension lines near the forest

6.1.6. House Structures

Tangiya Basti

There are different type of housing structures in settlements. Many houses have used woods/planks to construct their houses. There are traditional Tamang houses, along with many stone in cement mortar houses in Tangiya Basti. All the houses in Matiyani tole are stone in

mud mortar with thatched roof. Most of the houses in Kathgaon are stone in mud mortar as well with use of woods in pillars and roof.



Figure 64: Tamang house in Tangiya Basti



Figure 63: Stone blocks in Cement mortar



Figure 66: Wood used in house



Figure 65: Woods/Planks used in the house in Tangiya Basti



Figure 67: Houses with thatched roof in Matiyani Tole



Figure 69: House made of wood in Tangiya Basti



Figure 68: Wood used in houses in Kathgaon

Most of the houses in all the three settlements use local natural resources such as wood for their houses. In terms of embodied energy, if local natural resources are used in the houses, it reduces the energy emission as well carbon footprint which is beneficial for environment.

6.2. Demography

6.2.1. Age and Gender

As per the Household Survey 2017, there are a total of 1439 households in Tangiya Basti with a population of 7047. Out of which 3550 (50.38%) are male and 3497 (49.62%) are female (GOECE, 2018).

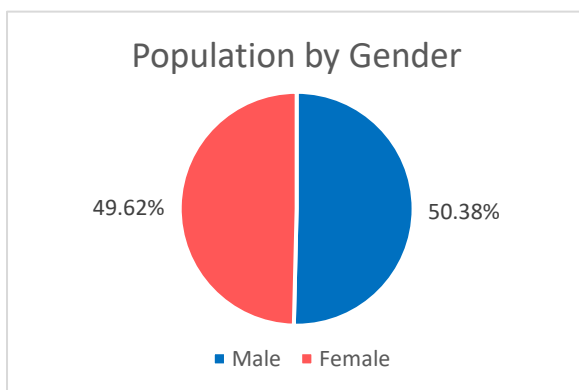


Figure 70: Population by Sex

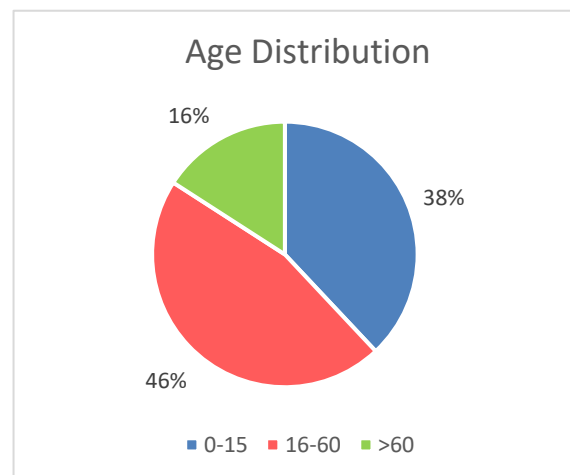


Figure 71: Population as per Age

Source: EIA Report, 2018

Looking at the age distribution, 2678 of the population is in the age of 0-15, 3249 lies in the age of 16-60 years and 1120 of the population is above 60 years (GOECE, 2018). As per the

household survey taken of the respondents, 7 of the respondents were female whereas 11 were male. Almost 83% of the respondents belonged to the age group of 16-60.

In case of Tangiya basti women seem empowered and gender equality is prevalent. When asked about gender differences, Sunita, a resident of Tangiya Basti said there is nothing as of such, women feel very safe and equal in the community.

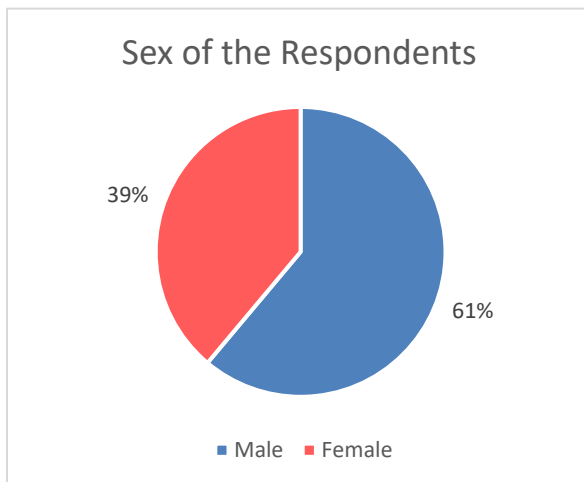


Figure 73: Sex of the respondents of Tangiya Basti

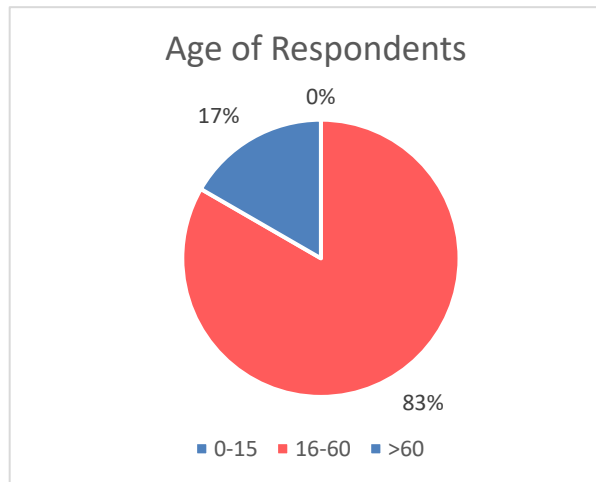


Figure 72: Age Distribution of the Respondents of Tangiya Basti

Kathgaon

Out of the 10 respondents, 2 of them were female whereas 8 were male. It was evident in the community that women are less empowered compared to Tangiya basti and certain gender inequalities seem prevalent in the settlement. For the age of the respondents, all of them belonged to the age group of 16-60.

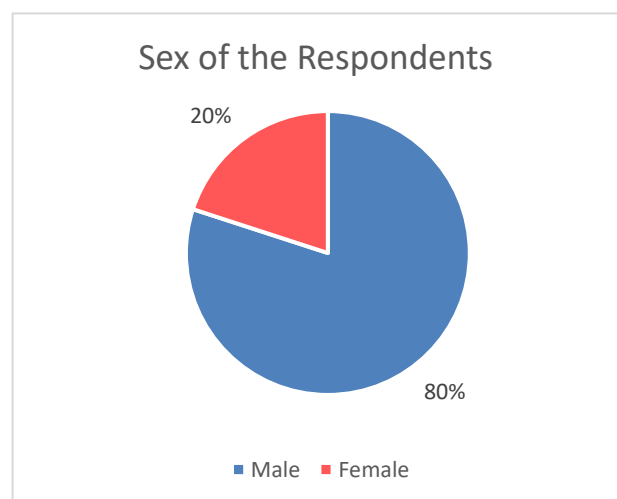


Figure 74: Sex of the respondents of Kathgaon

Matiyani Tole

As per household survey 2017, there are 352 people living in Matiyani out of which 207 are male while 145 are female.

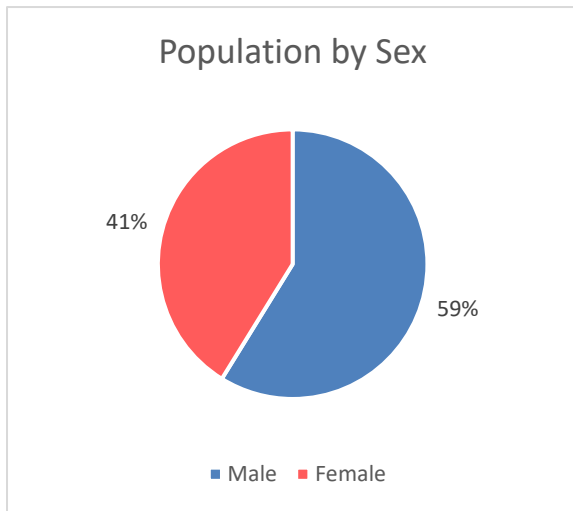


Figure 76: Population by Sex of Matiyani Tole

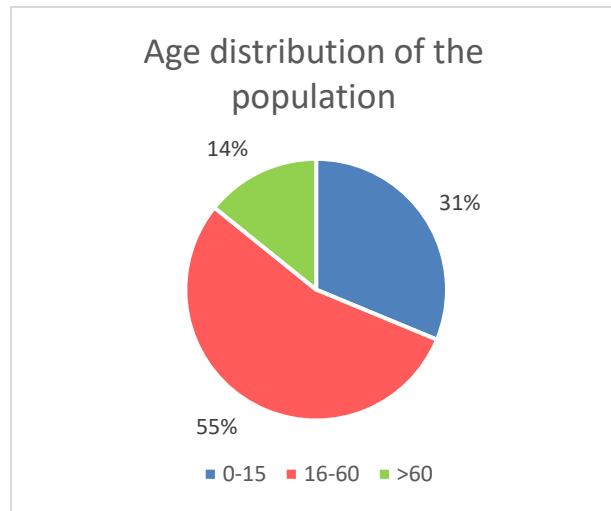


Figure 75: Age Distribution of Matiyani Tole

Source: EIA Report, 2018

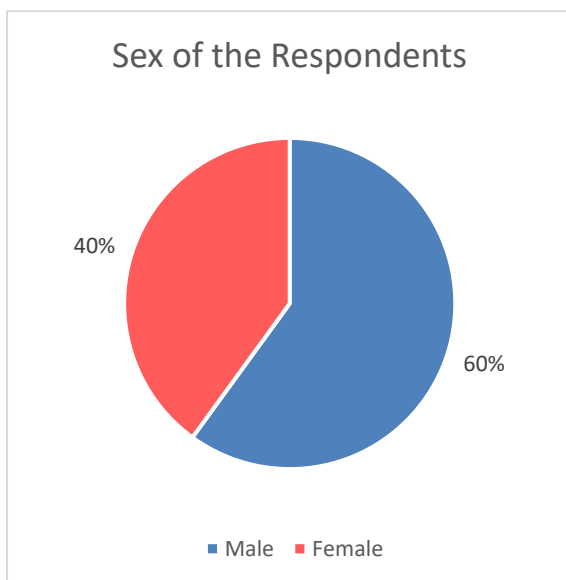


Figure 78: Sex of Respondents of Matiyani Tole

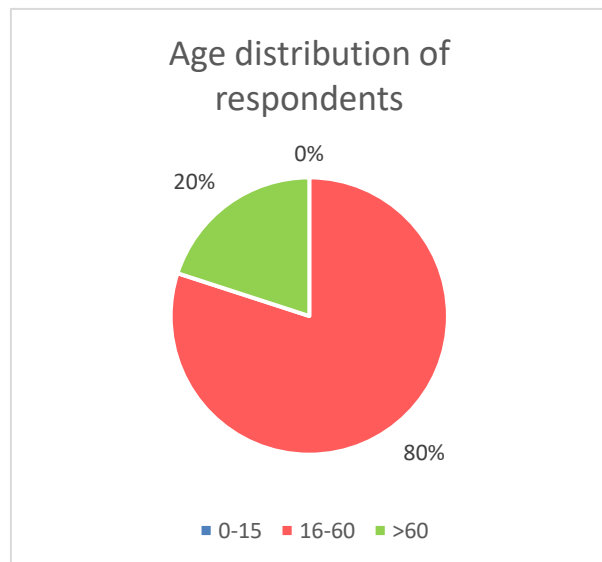


Figure 77: Age distribution of respondents of Matiyani tole

6.2.2. Religion and Ethnicity

Tangiya Basti

As per Household Survey 2017, the majority of the population in the settlement is Tamang (61%) followed by Magar, Chettri and others.

Out of the 18 respondents, 55% were Chettri/Bahun, 28% were Tamang and 17% belonged to other castes. 72% of the respondent were Hindu whereas 28% of the respondent were Buddhists. Tamangs are at majority because earlier planters settled in the basti were mostly Tamangs migrated from hills.

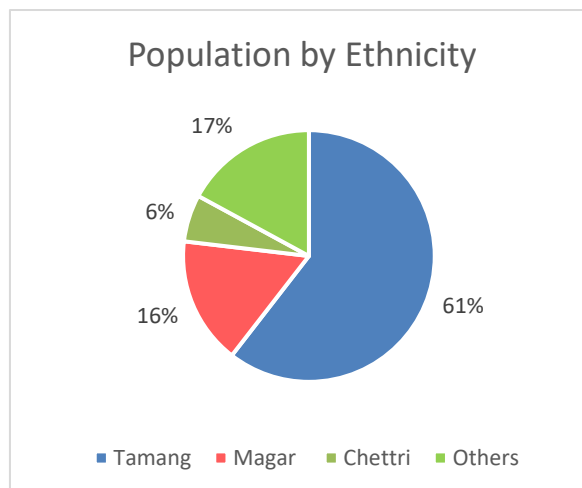


Figure 79: Population by Ethnicity of Tangiya Basti

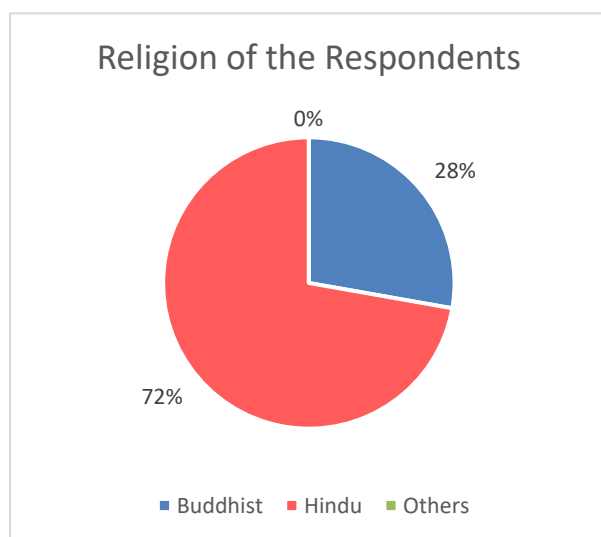


Figure 81: Religion of the Respondents of Tangiya Basti

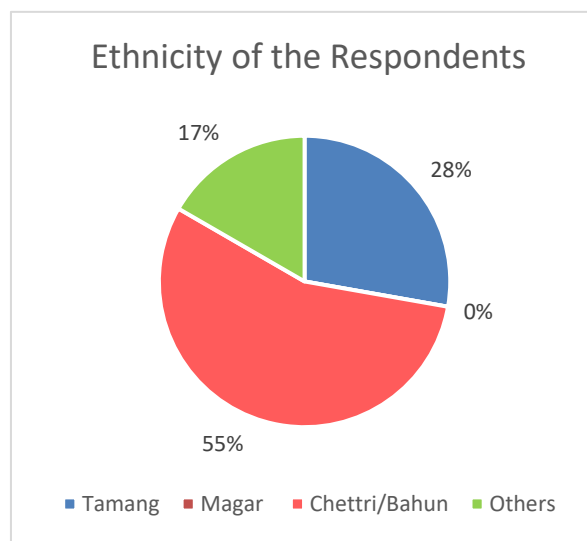


Figure 80: Ethnicity of the Respondents of Tangiya Basti

Source: EIA Report, 2018

Kathgaon

Out of the 10 respondents, 60% were Chaudhary while Magar, Chettri, Tamang and Dalits constituted 10% each. Majority of the residents in Kathgaon are Hindus. 10% of the respondent of were Buddhist whereas rest 90% of them were Hindus.

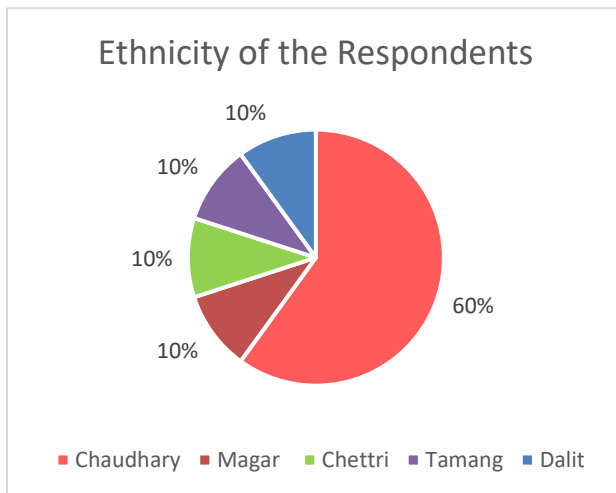


Figure 82: Ethnicity of Respondents of Kathgaon

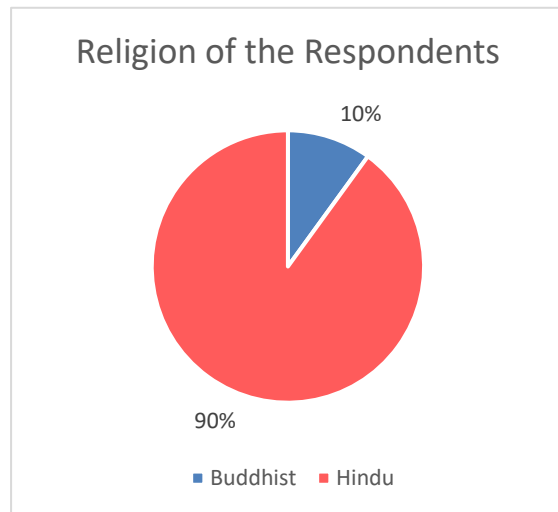


Figure 83: Religion of Respondents of Kathgaon

Matiyani Tole

Out of 15 respondents, 11 of them were Dalits, 2 were Kusuwa, 1 Yadav and 1 Chettri. All of the residents in Matiyani Tole are Hindus.

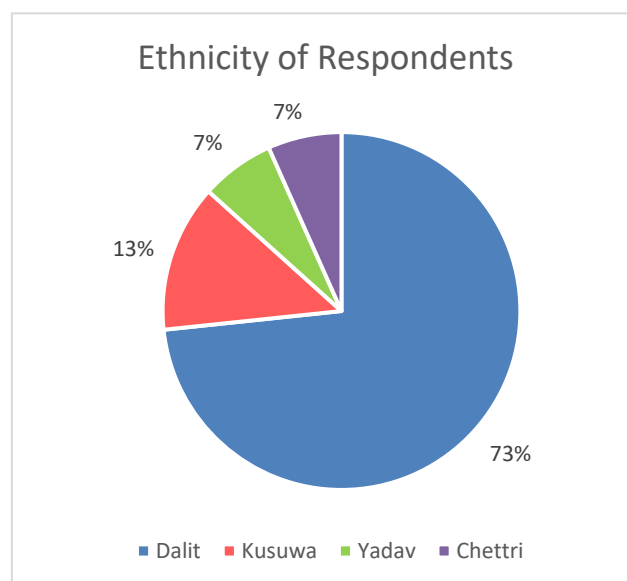


Figure 84: Ethnicity of Respondents of Matiyani Tole

6.3. Social Infrastructure

6.3.1. Schools

Tangiya Basti

There are 4 schools in Tangiya Basti, 2 of them are private and 2 are public schools. Private Schools: Shikshadip Eng. B. School and Saint Paul Academy up to Class 5. Public Schools: Shree Shanti Primary School up till class 5 and Shree Nepal Rastriya Primary School up till class 8. Most of the parents are forced to send their children to Nijgadh for further education.

In one of the interviews, one of the KII, Man Bahadur Thapa also showed his disappointment that the schools in the community lack proper infrastructure and are up till Class 8 only, due to which many of the children end up dropping their education. The reason being the rents in Nijgadh are high and everyday up down commute is difficult.

Another reason being at 8th standard, children are still very young to live away from their parents which also leads them to being involved in wrong activities and not being able to concentrate much in their education. But due to poverty, many households are not able to afford education for their children.

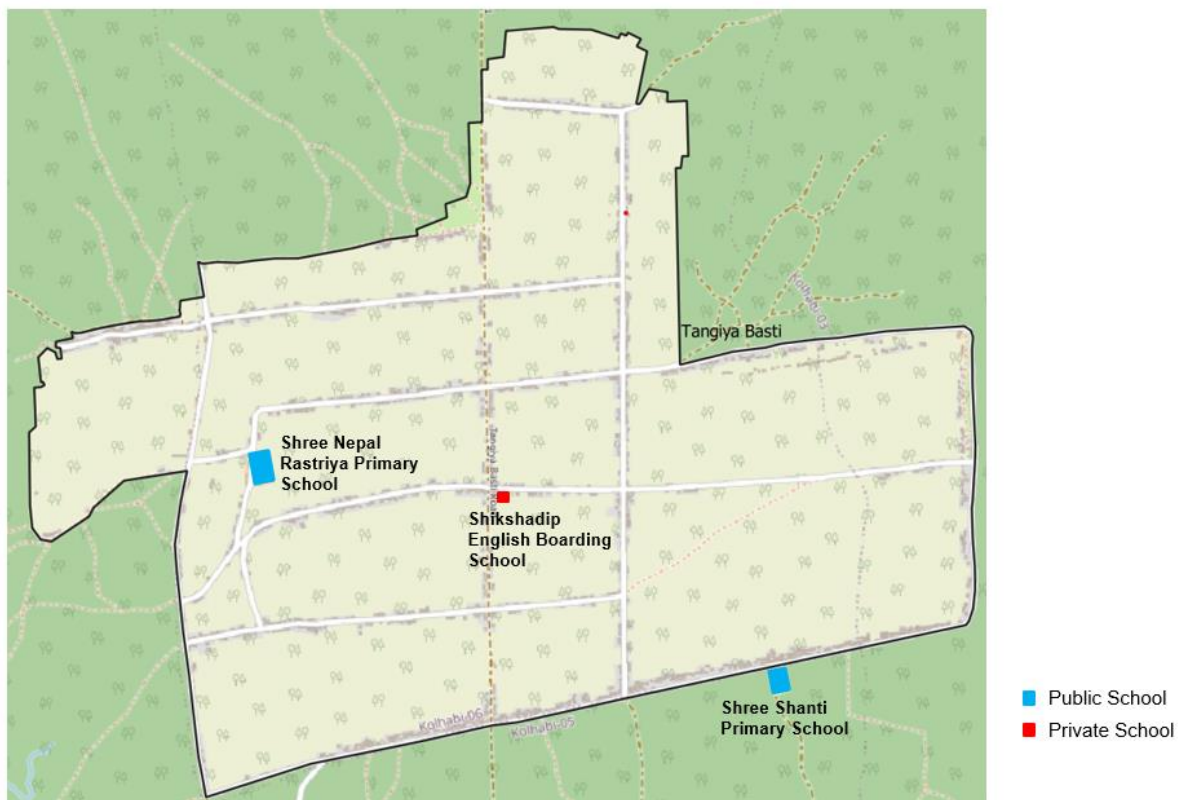


Figure 85: Schools located in Tangiya Basti



Figure 86: Public School in Tangiya Basti



Figure 87: Classroom of a public school in the Tangiya basti

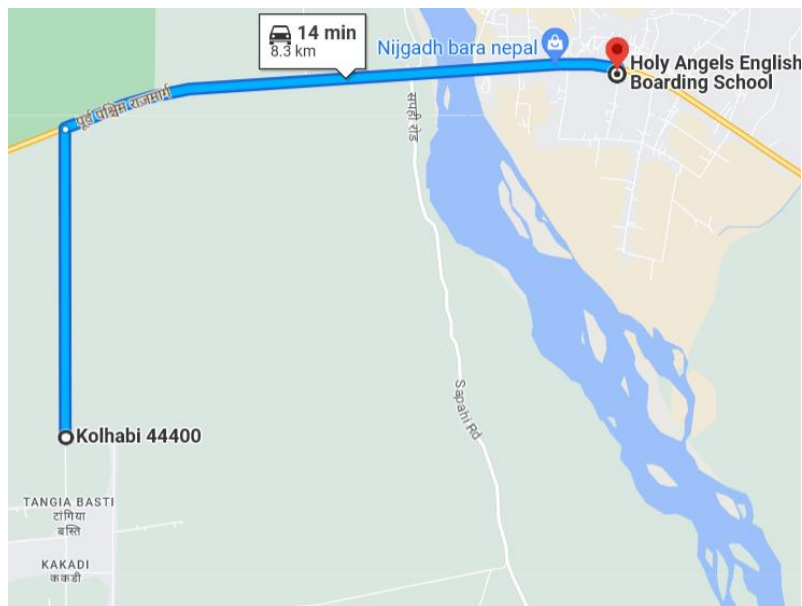


Figure 88: Nearest Boarding School in Nijgadh at a distance of 8.3 km from Tangiya Basti

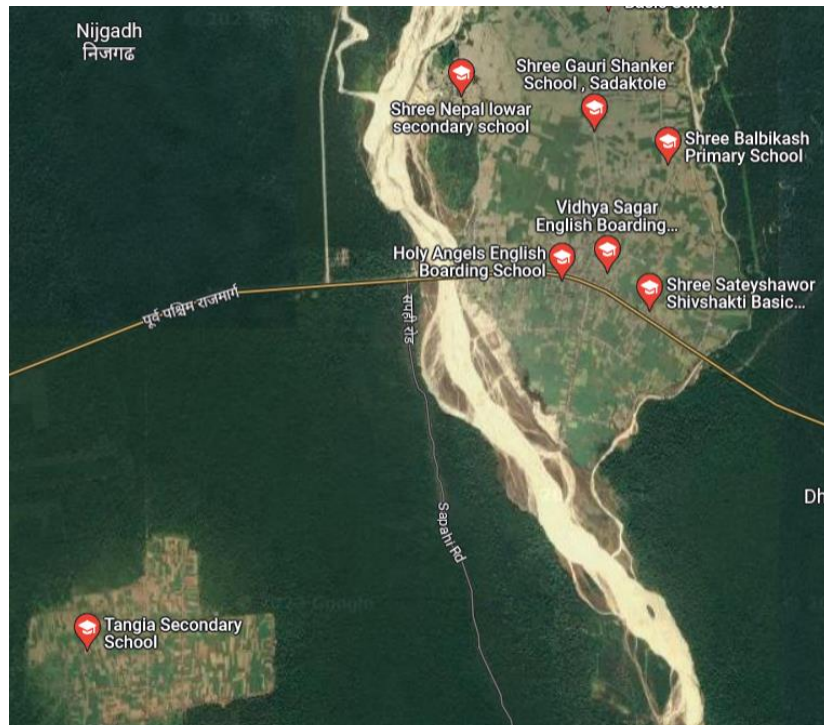


Figure 89: Nearby Schools in Nijgadh around 9 kms from the Tangiya basti

Kathgaon

There is 1 public school in Kathgaon: Shree Nepal Primary School up till class 5 after which kids go to nearby town such as Ramnagar, Madhuwan etc. for further education.



Figure 90: School located in Kathgaon



Figure 93: Shree Nepal Primary School



Figure 92: Boarding school bus of another town in Kathgaon

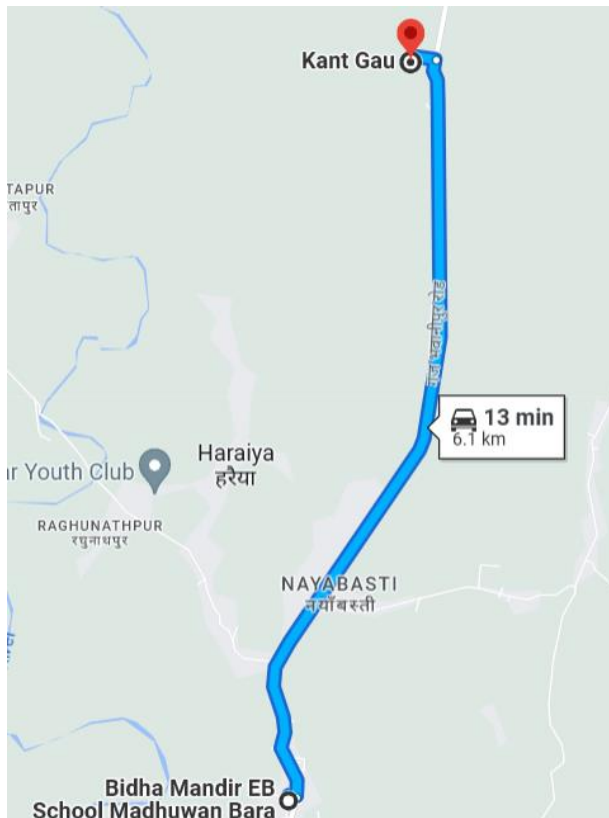


Figure 91: Distance from Kathgaon to school in Madhuwan

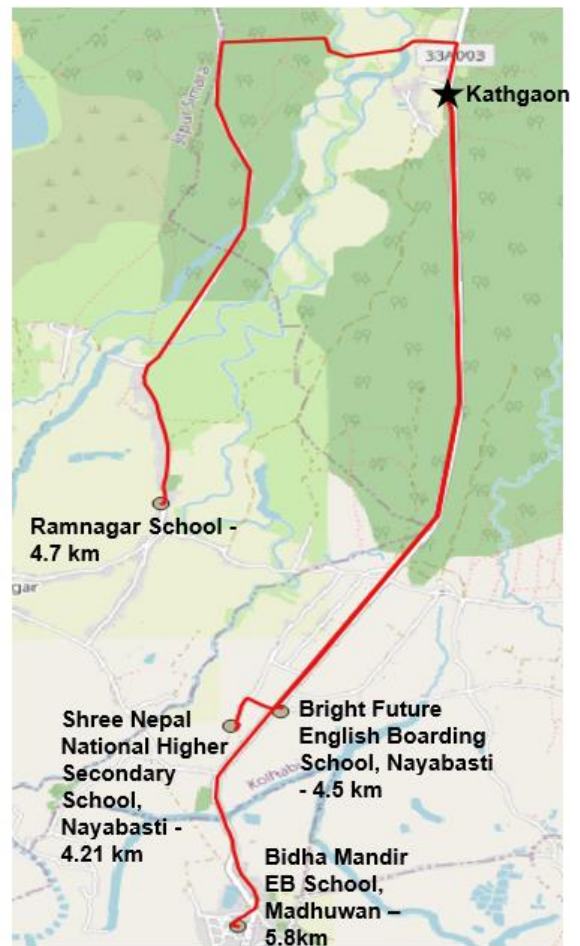


Figure 94: Schools in proximity to Kathgaon

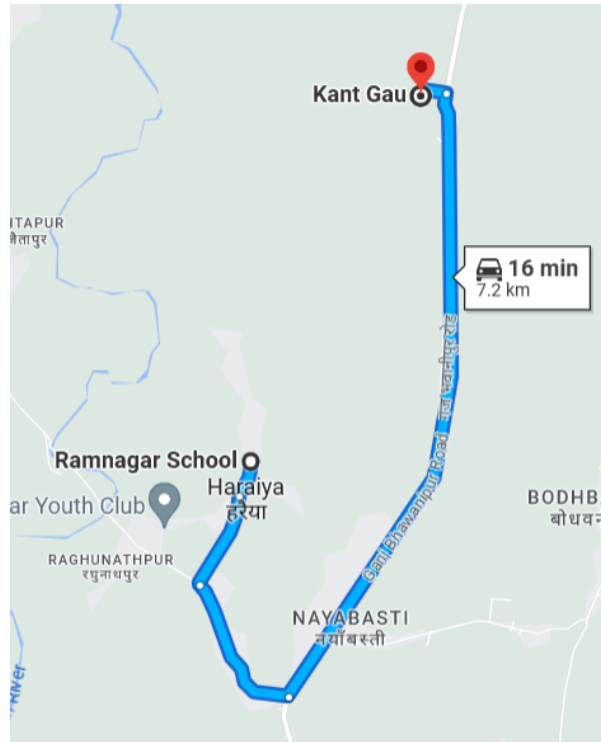


Figure 95: Distance from Kathgaon to school in Ramnagar

Matiyani Tole

There is 1 public school in Kathgaon: Shree Nepal Primary School established in 2066 BS up till class 5 after which kids go to nearby towns like Jaitapur, Raghunathpur, Lamidada for



Figure 96: School in Matiyani Tole

further education. The school has 103 student, 2 teachers and 1 staff personnel. Laxmi, a school

teacher also expressed her disappointment of trying to increase the class standard at least up to 8th in vain. She also mentioned that children have to cross forest and river to have access to education while being very young as one of the major barriers to education.



Figure 97: Shree Dalit Primary School

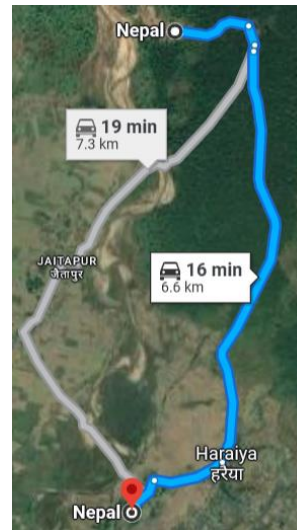


Figure 98: Distance from Matiyani Tole to Raghunathpur

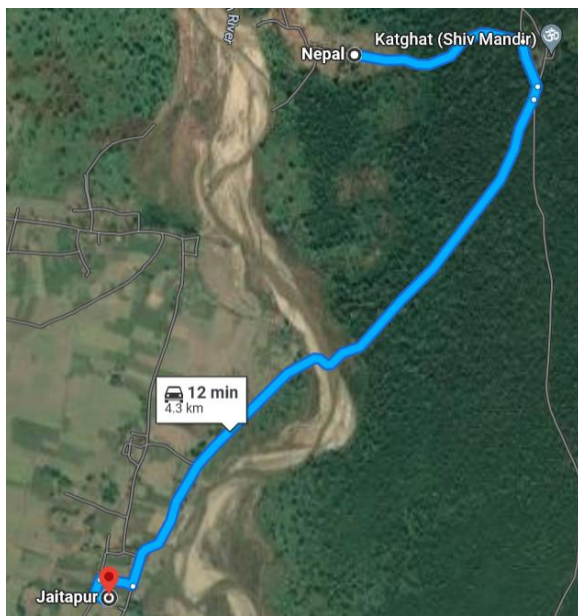


Figure 99: Distance from Matiyani Tole to Jaitapur

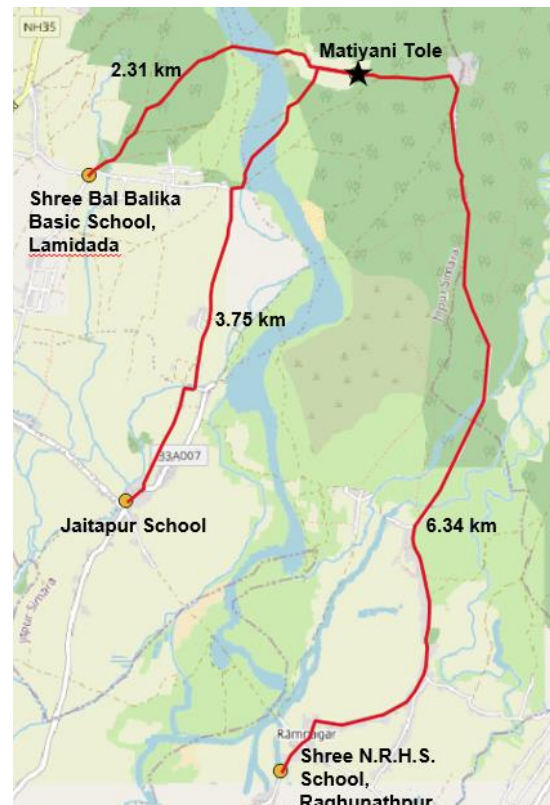


Figure 100: Proximity of different schools from Matiyani Tole

6.3.2. Health

In the Tangiya Basti, there is one community health post in the settlement. The health post has 3 employees: 2 doctors and 1 nurse. The health post provides first aid services, maternity services and regular checkups. Nijgadh is the nearest city for any major health issues for Tangiya Basti.

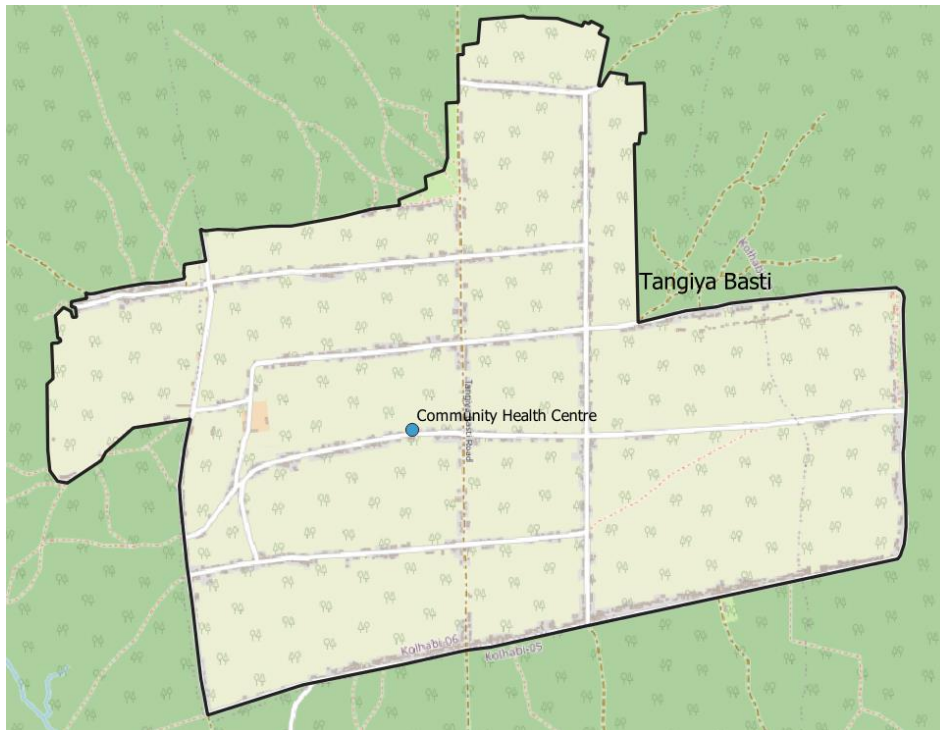


Figure 101: Health Centre located in the basti

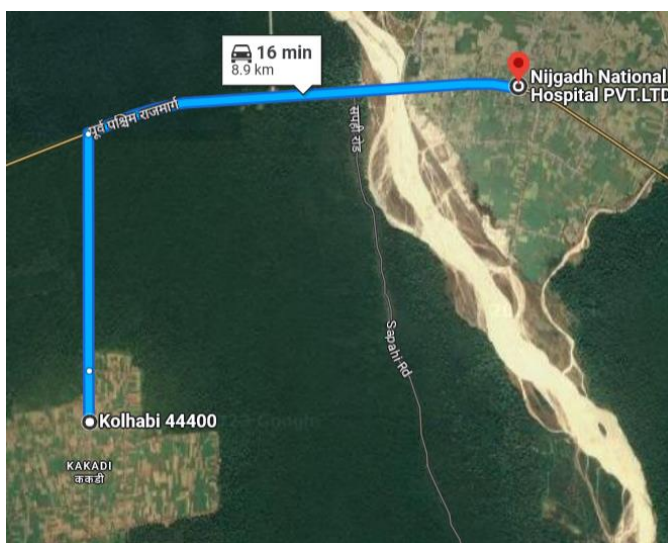


Figure 103: Nearest Hospital in Nijgadh from Tangiya Basti



Figure 102: Inside of health centre in Tangiya Basti

There are no health centers in Kathgaon and Matiyani Tole. They go to Madhuwan to go for health checkups. Vikram, ward member of Kolhabi 8 mentioned there is no health centre in Kathgaon, people have to reach Baluwa Bazaar or Madhuwan to have access to hospitals or health centre. The lack of health centre has led to many deaths in village.

6.3.3. Cultural Heritage

There is a gumba inside the Tangiya basti called Shanti Buddha Bhumi Vihar and a church inside the basti. Along with that, there is an idol of shiva in the main chaur of the main school chowk of Tangiya Basti. There is also a Bhairav temple along the Gunj Bhawanipur Road of Kathgaon and a very old shiva temple inside Kathgaon which was constructed by Banu Chaudary. The marriages in Kathgaon also take place in this temple. There is a shiva linga in Matiyani tole.

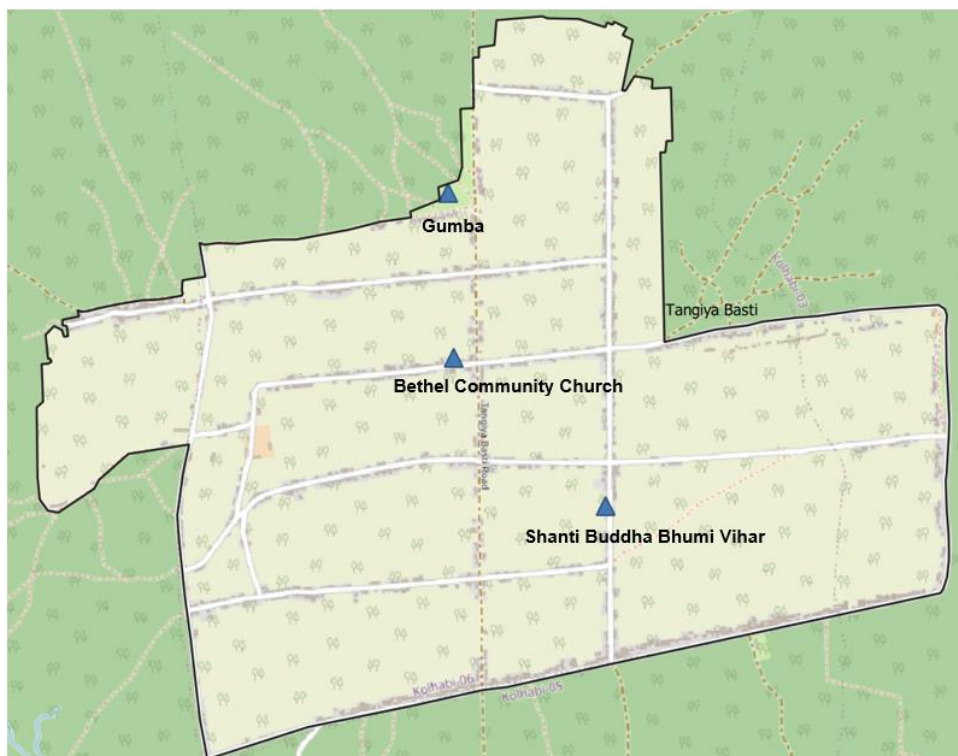


Figure 104: Religious Places in Tangiya Basti



Figure 106: Shree Buddha Shanti Vihar



Figure 105: Bethel Community Church



Figure 108: Shiva Linga in Matiyani Tole



Figure 107: Bhairav Temple near Kathgaon

The most important temple near all the three settlement is Sahajnath Temple (Katghat Shiva Temple). The Ward Chairperson of Ward 8, Kolhabi municipality also informed that this temple was constructed around 400 years ago when Chaudhary people came to the area during the reign of Jung Bahadur Rana. There is also a month-long fair in the month of Shrawan where devotees from all over Nepal as well as India visit the temple. There are autos available in the main entrance which commute to the temple. The autos are not available after 3pm while returning from the temple to the entrance.



Figure 110: Sahajnath Temple



Figure 109: Entrance of Sahajnath Temple

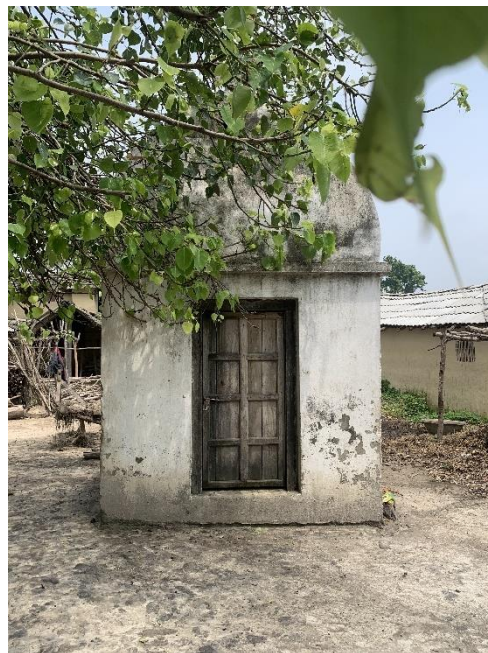


Figure 111: Temple constructed by Banu Chaudhary in Kath Gaon

6.3.4. Social Activities

6.3.4.1. Community Gatherings in Tangiya Basti

The community people gather mostly in the main chaur under the shade of trees with men gambling and women talking among themselves. They also gather in hotels for drinking alcohol on Saturdays especially.



Figure 112: Old men playing game in main chaur of Tangiya Basti

6.4. Economic Infrastructure

6.4.1. Economic Activities

Tangiya Basti

The basti's main livelihood depends on agriculture, but there can be seen many shops and markets as well inside the basti itself. They have a major dependence on the forest for cattle rearing and chopping firewoods. The major economic activities in the settlement are:

Farming

The major crops grown are maize, banana and rice. These are sold to nearby markets like Nijgadh and Kolhabi.



Figure 116: Banana Plantation



Figure 115: Rice Plantation



Figure 114: Women working in the paddy field



Figure 113: Maize Plantation



Figure 118: Maize stored that are sold to nearby markets



Figure 117: Grains are taken by tractors to nearby markets

Markets

The basti has many essential shops such as grocery shops, hotels, liquor shops, beauty parlors, fertilizer shops, bike repairing shops, electrical equipment shops etc. Only in case they need to buy important things, they need to go outside the basti to the Nijgadh market.



Figure 120: Small hotel in the basti



Figure 119: Small hotels in the main chaur



Figure 123: Bike repairing shop in the basti



Figure 122: Medical Shop



Figure 121: Shops



Figure 124: Small cloth shops



Figure 125: Shop

Table 4: Business in Tangiya Basti as per Household Survey, 2017

Type	Number
Kirana Pasal (small)	12
Hotel (small)	6
Barber Shop	3
Meat Shop	4
Co-operative	2

Source: EIA Report, 2018

Driving

Some of the residents of the Tangiya basti work as auto drivers and van drivers who commute people to and from Tangiya Basti. Usually, they charge Rs. 500 for the auto if you want to travel alone, else it is Rs. 100 per person. When charging Rs. 100 per person they do not commute until there are minimum of 5 people.



Figure 126: Auto Drivers in Tangiya Basti

Weaving Carpets

Women are also involved here in weaving carpets that are sold to Kathmandu.



Figure 127: Weaving carpet in Tangiya Basti

Source: The Record, 2019

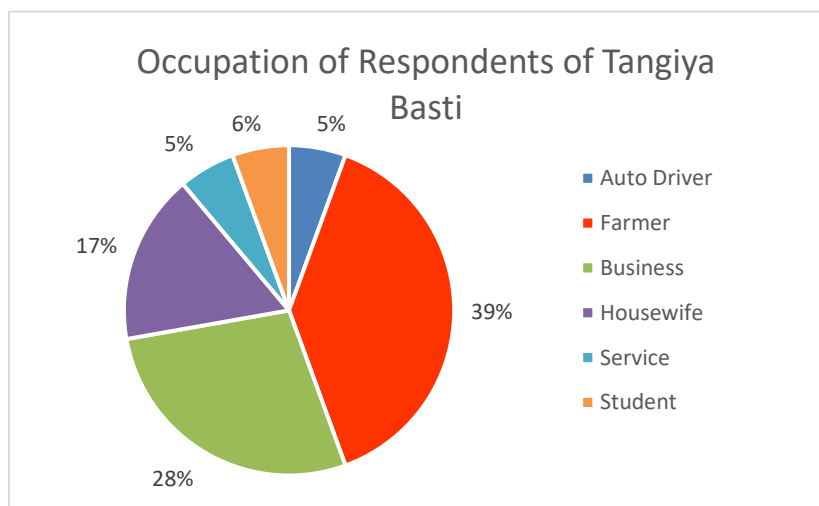


Figure 128: Occupation of the respondents of Tangiya Basti

Kathgaon

Being an indigenous community, the main occupations in the basti centre around dependence on forest. Most of the people are involved in farming, cattle rearing, fishing etc. There are very few shops in the settlement so people need to commute to other areas for even basic needs, mostly Naya Basti or Madhuwan. The major economic activities in the settlement are:

Farming

The major crops grown in the settlement are wheat, rice, maize, mustard etc. are grown.



Figure 130: Field in Kathgaon



Figure 129: Granary for storage of grains



Figure 132: Tractors that transports grains to market



Figure 131: Field in Kathgaon

Cattle Rearing



Figure 133: Cattle Rearing in Kathgaon

Vikram, ward member also mentioned that “some people do work in factories outside the settlement in Simara as labors, mechanics etc., and earn around 20 to 25 thousand in a month. 5% of the population is involved in foreign employment.” Out of the ten respondents, only one family had a son abroad for employment. Bikau, farmer remarked that since this is an indigenous community, people tend to go abroad very less here.

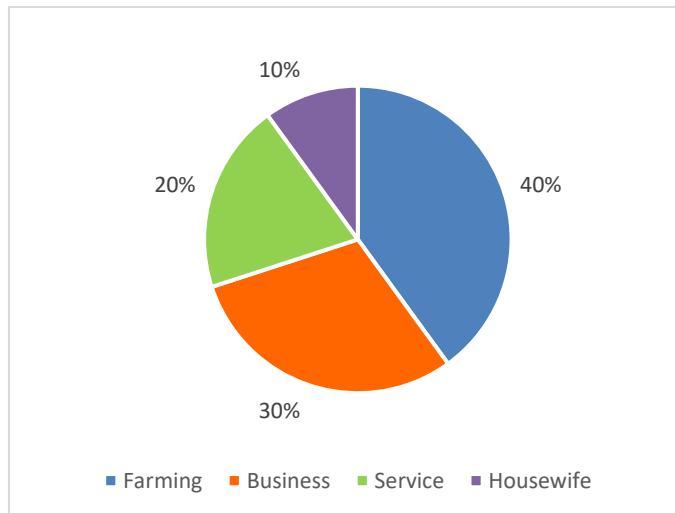


Figure 134: Occupation of Respondents of Kathgaon

Matiyani Tole

The main occupations in the basti centre around dependence on forest. Most of the people are involved in farming, there are no shops in the settlement so people need to commute to other areas such as Jaitapur, Madhuwan for even basic needs.

Farming



Figure 135: Field in Matiyani Tole

Out of the 15 respondents, 3 families had their family members abroad for foreign employment. 4 of the respondent’s families had people working outside Matiyani Tole as electrician, plumber, carpenter.

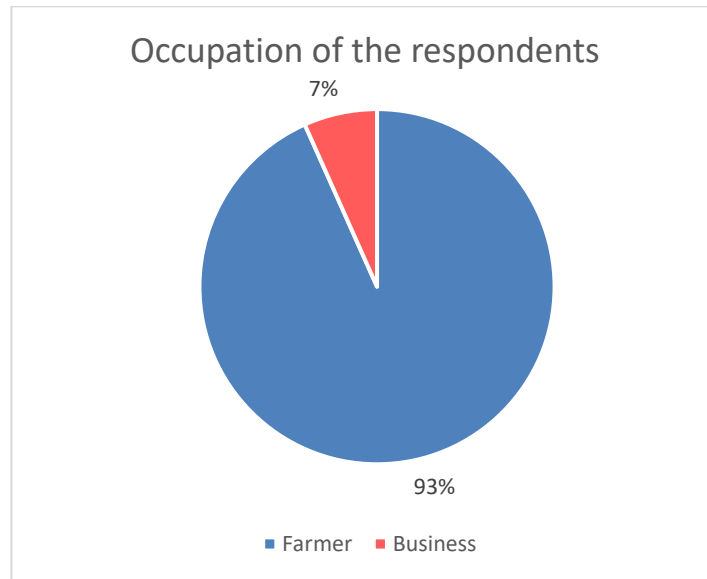


Figure 136: Occupation of the respondents of Matiyani Tole

6.4.2. Banks/Financial Institution

There are no banks or ATMs in the settlement. There are 2 cooperatives in the Tangiya basti.



Figure 137: Sahkari Sanstha

6.4.3. Land Ownership and Transactions

Looking at the settlements; Tangiya Basti and Matiyani tole are settled on government land so they do not have lal purja for their plot. 16 of the residents in Kathgaon have settled in ailani Jagga while remaining households do have lal purja. Out of the 10 respondents in Kathgaon,

only 1 of them did not have lal purja while 9 of the respondents had lal purja. For Tangiya basti and Matiyani Tole, none of the respondents had Lal purja.

Land transactions are prevalent in Tangiya basti, explaining regarding the matter, Hajarilal, shop owner explained, “Selling or Buying land here is like buying vegetables in a market. Here, they measure the land plot and write it in a paper that this is your land and the land is transferred to another owner. Five to six other people are present there during the process as a proof of the land being sold.”

6.5. Dependence on Forest

6.5.1. Cattle Rearing

People go in groups for cattle grazing to the forest.



Figure 138: People taking their cattles for grazing to forest in groups

6.5.2. Chopping Firewoods



Figure 139: Cutting firewoods for cooking and other purposes

6.5.3. Mushroom Picking

The wild mushrooms are found under the Sal trees which are picked by the members of the settlement and surrounding areas. They grow during rainy season. The residents also sell these mushrooms for around Rs. 500 per kilo in the nearby markets.








6.5.4. Non-Timber Forest Products in the area







Non-Timber Products can be obtained from trees, herbs or shrubs and are an important element of forest which are also used by the local and indigenous communities. They could also be an important factor in income generation for these communities. Due to infrastructure projects, the collection of these forest product such as firewood, indigenous medicinal herbs, seasonal wild vegetables and fruits from the forest area will not be possible affecting their way of life. Some of the NTFP used by the local communities in the area are:












Figure 140: Women bringing grass from forest area

Table 5: Non-Timber Forest Products near settlement

S.No.	Nepali Name	Image	Application
1.	Neuro		Vegetable locally used and sold to local market
2.	Dundu Saag		Eaten Locally
3.	Saranchi Saag		Eaten locally
4.	Poi Saag		Eaten locally
5.	Bethe		Sold locally
6.	Tilkor		
7.	Lahare		Eaten as sag

8.	Ban-kurilo		Collected commercially and locally for milking cow/buffalo
9.	Vyakur		Eaten locally and sold in market
10.	Jibre Sag		Eaten locally and sold in local market
11.	Sim Sag		Eaten as vegetable
12.	Titepati		Medicine for bleeding, antiseptic and green manuring (organic fertilizer)
13.	Rajbriksha		Medicinal for stomach problem

14.	Sindhure		Used locally
15.	Kukurdaino		
16.	Pipala		Commercially collected and used as medicines locally
17.	Jamun		Eaten as fruit
18.	Bel		Eaten as fruit
19.	Bayer		Eaten and sold as fruit
20.	Banmara		For making charcoal briquette

21.	Harro/Barro		For stomach disorder and medicinal purpose
22.	Bhorla		Eating plate and making umbrella locally with the bark for making rope

Source: Images – Google; Table - GOECE, 2018

6.5.5. Human Wildlife Conflict

There are wild animals in the vicinity of the area of all the three settlements. All the three settlements when asked about wild animals pointed towards the threat of elephants and tigers in the area. There is frequent occurrence of elephants in the area and they destroy all the crops as well there is threat of human life as well from tigers as per the respondents.

Dil Bahadur, a farmer when asked regarding the matter said, there are wild animals here, elephants come sometimes. This forest is their home, it is their place before us, in a way they are also gods, a form of Lord Ganesh. This also shows the connection farmers have with the wildlife. The priest of Katghat Shiva Mandir also showed similar belief expressing that elephants come to the temple to pray to Lord Ganesha during the month of Shrawan.

Birendra, carpenter also mentioned that other animals such as deer, leopard, wild pig etc. also come to the settlement sometimes. Sunita, housewife also stated two people were attacked by tiger few months ago in Tangiya Basti. Elephants come here very often and destroy the crops.

6.5.6. Community Rituals

In case of death, Tamangs bury their dead ones in sacred places in forest whereas Hindus in Tangiya Basti burn the bodies in Bakaiya River, Kathgaon in Kath khola and Matiyani Tole in Pasaha River. Any weddings take place inside the community itself in their homes.



Figure 141: Sacred spaces where people bury bodies in forest



Figure 142: Hindus burn the bodies in rivers



Figure 143: Cremation place being constructed in Pasaha River

Kathgaon and Matiyani Tole also believe in forest spirits. Vikram, ward member of Ward 8 mentioned that every year in Ashad, capital of 50,000-70,000 is collected from entire village to do Asari Puja for agriculture.

6.5.7. Others

There is also a rooted belief that the communities are responsible for deforestation of the forest. On this matter, Ramkumar, an auto driver expressed, “Tangiya basti people had a discussion with Forest Division Office to involve the community and help with the conservation of the forest. We also conveyed that the forest can be protected and conserved if the community invests itself in the process else it would be difficult as everyday trees are being cut down and needs to be monitored. We decided to make a samiti of 25 people from different tole to do the reki of the forest every day. That way we can also protect the forest and stop trees from being cut. When Debu Kharel (not sure of the name) had come, we even executed this proposal, but after that Forest Division Office concluded that the forest cannot be conserved this way and the reki was cancelled. After that, the carelessness started again in terms of the forest.”

6.6. Analysis of the settlements

Sectors	Tangiya Basti	Kath Gaon	Matiyani Tole	Remarks
Roads	Gravel Roads in major and internal roads	Gravel road in major road, lack of proper internal roads	Gravel Road in major road	The inadequate roads and poor road access put high cost of transportation; limit the uses of local markets to the sales of their products, can lead to accidents. Improved roads can reduce household expenditure;
Transport	Autos; Vans and Private	Private only and Bus	Private only	Inadequate access to transport can limit economic linkage of community; deprive of access to nearby

				infrastructure provisions;
Water Supply	Boring and Tube wells	Tube wells	Tube wells	Dependence on underground water (reliance on ecosystem); declining rate of ground water.
Solid Waste Management	Compost food waste into fertilizer and burn plastic waste	Compost food waste into fertilizer and burn plastic waste	Compost food waste into fertilizer and burn plastic waste	Sustainable management of organic waste; Burning of plastics can cause air pollution; environmental degradation
Liquid Waste Management	Throw waste water in the fields	Throw waste water in the fields	Throw waste water in the fields	Seepage of waste water to underground deteriorating the quality of water; river pollution
Electricity	Electricity and Solar panels	Electricity	Solar panels in minimal houses	Increase self-employment or micro-enterprises;
Communication	No network	No network	No network	Barrier in access to infrastructure

				provisions such as ambulances, hospitals & emergency response
Cooking	Gas and Daura	Gas and Daura	Daura	Use of woods contributes to air pollution and deforestation;
Schools	4 schools in basti up to 8 th standard	1 public school up to standard 5	1 public school up to standard 5	Improved access to education can contribute to reduced illiteracy, improved school attendance, lesser drop outs.
Health Centre	1 health centre	No	No	Improved access to health centers and hospital can improve life expectancy; improved quality of life.

6.7. Airport and Local Communities

The terms of Nijgadh International Airport go way back to 1995 when the government-initiated discussions to construct an international airport of 80 square kilometer in Nijgadh, in the Bara District in southeastern Nepal. (GAAM, 2017). The project remained in discussion but it regained its priority after a Turkish Airlines Aircraft skidded off runaway in Kathmandu in March 2015, causing airport to shut down for four days. The debate surfaced after government

was compelled to an Environmental Impact Assessment (EIA) report which showed that the project would require cutting of 2 million trees (Dhakal, 2018).

According to the official of Second International Project Office, the soil testing is being done again after which the decision of airport will be made. In regards to the construction of the airport, most of the community members agreed that the project is an important step to country's national development.

There is also a visible link between hindrance in development in communities in regards to the airport project. In terms of basic provision such as road, all the three settlements have gravel or earthen road; provision of electricity was made last year in Tangiya basti while Matiyani Tole still doesn't have access to electricity. So, when the requests are made in regards to the provision of infrastructure, the project has been an excuse for holding off the development of the communities itself. Kharimaya, a shop owner expressed her discontent over the project,

“We just hope that we will not turn into old people by the time government decides to settle us into new places because at that time we won't be able to do much. We have been in a dilemma for far too long, maybe some people might benefit from but we would prefer if we could continue living here itself. In a way, we have been waiting for a long time, so we would prefer either it to be done or tell us that the project will not be continued here. Even the area has not been developed because of the project. Many people haven't repaired there houses as well because of the dilemma.”

Talking in terms of dissatisfaction, another interviewee, Ramkumar Ghising, an auto driver expressed “Because of the project the local people do not have access to basic infrastructure provision in a municipality, look at the roads itself, I don't think in municipality area people have such basic infrastructure issues as in all roads are gravel roads, the whole community doesn't have access to network communications, in case of emergency, we end up walking from here to there just to have a network range. In case of basic provision like electricity itself, we got access to it only last year.”

Rajesh, business person, remarked that people have voiced their need of basic infrastructure such as electricity, road, but due to the dilemma of the construction of airport, development has been in hold as the state is reluctant to spend money due to construction of airport.

In terms of development, Tangiya basti is more developed than other two communities because of the community's role in development as well. The community collected money in groups of

10-15 people to get the works of boring done for their households as it plays a major role in farming as well. Govind, a farmer, also mentioned regarding the boring, “We have done all the boring with our own money. In every locality, people created a group of 15-20 households and each household raised 40000 -50000 and the boring work was completed which has been important for irrigation purpose.”

There is a community group called “Tangiya Basti Sarokar Samiti” that has been actively involved in raising voice of the community people for development as well as resettlement context of airport.

6.8. Citizen Participation

Citizen participation is an integral part of any infrastructure project’s success. In terms of citizen participation in the project, most of the respondents did not feel they were involved much in the planning process. Lack of transparency in decision making can lead to discrepancies in the project.

As per the ladder of information, the third step in the ladder is informing which was also not prevalent in the three settlements. When asked about communication regarding the project, Sanjay, farmer remarked that they also found out most of the details regarding the project through news or radio.

Social inclusion is an important factor that facilitates participation in society for all groups in a community, particularly those who may be disadvantaged because of age, sex, disability, race, ethnicity, origin, religion, or economic status. This is very important in terms of participation of local communities in the process of resettlement.

6.9. Resettlement

6.9.1. Compensation Policy

All the three settlements have been demanding the government to resettle them with infrastructure provisions to a new area before the construction of the airport. In terms of resettlement, since Tangiya Basti and Matiyani Tole are settlements living in government land, no decision has been made in regards to the compensation of the settlement. Meanwhile Kathgaon has already received compensation. The compensation has been distributed in following manner:

Table 6: Compensation Structure for Kathgaon

S.No.	Land Type	Compensation (per katha)
1.	Land untouched by Road	Rs. 2,41,500
2.	Land touched by main survey road	Rs. 4,60,000
3.	Land touched by internal roads	Rs. 3,39,250

In one of the interviews with ward chairperson of Kathgaon, he expressed,

“The compensation has been received by most of the people of Kath gaon except for the landless people in the settlement. The compensation has been distributed to the community as per the road in the settlement. The development in Kathgaon has not been structured. Most of the people are discontent about the cash compensation given and have raised concerns that government should have resettled them to another location. But people are still living in the area in hopes of getting resettled Also being an indigenous community, Kathgaon’ s inclusion in the decision-making process is also not significant.”

Another interview with Vikram and Bikau, Bikau expressed, “Since Kathgaon is an indigenous community, we would have preferred, if we could continue living together and resettled by government to a new area. They also expressed that after the land compensation have been provided, since then the land prices have also significantly changed as many people bought land around the project area due to which buying land in nearby area has been a further challenge. Talking about the compensation, he also expressed that people had to pay 2.5% land tax as well which further reduced the amount. Now, the tax has increased to 5%.”

These are some of the reasons Kathgaon has been unhappy with the compensation. People of Kathgaon have been provided with land compensation, they have bought land in different areas such as Madhuwan, Lamidada, Bardibas etc.

Looking at the demands for the resettlement, Ramesh Sapkota, member of Tangiya Basti Sarokar Samiti mentioned, “The government should provide land compensation and proper resettlement of the community should be done. Some of our demands are: 2 bigha 5 katha land for each household; proper houses; basic infrastructure provision need to be available;

availability of food and grain for 1 year until people accommodate to new employment; a person from each household should receive employment as per their skill level in the airport.”

Also, for Matiyani Tole, Laxmi, school teacher also expressed, “Around 2-3 years ago, the whole community along with Tangiya basti was called to Bhumi Adhikar in regards to the airport, where they were informed that for “Ailani” Jagga, same land management would be done for the community as Tangiya basti.”

Through the household survey, it is evident most of the people want land compensation along with proper resettlement as 41 respondents when asked mentioned they prefer land compensation along with proper resettlement compared to 2 respondent who mentioned they prefer cash or land compensation only. Explaining the reason for preferring land compensation, Sunita, housewife explained, “If the government could resettle into new houses that would have been nice, but we don’t know what kind of houses they would build for us. It wouldn’t be house like we build for ourselves. So, I would prefer if we get compensated so that we can construct our houses on our own, instead land compensation would be better.”

Some of the respondents also expressed their disappointment in terms of relocating from their existing area, in one such interview, Mina, housewife expressed If they don’t have to resettle, this place is good for the living, the air and water is good, the area and plot size is geometrically planned, she would be happy if they can continue living in the area.

6.9.2. Review of EIA Report

There are six modalities that have been considered for the compensation as per EIA Report (GOECE, 2018):

- Cash compensation of the properties
- Cash compensation of the property along with hardship and allowances
- Rehabilitation grant – Compensation to people considering the length of the stay
- Land to Land compensation
- Resettlement in Janata Awas Karyakram
- Resettlement with the existing resettlement policy and rules of government of Nepal

As per Modality 4, some areas have been assessed for the possible resettlement which are mentioned below:

1. East of Baruwa Bridge, West of Dhansar River, South of Bharatganj Shigaulak and north of MRM.
2. North of Tamagadhi, West of Bakaiya river, South of Ratnapur VDC and East of Unasi bridge
3. East of Pathlaiya, North of Maulapur, West of Pasaha Khola and South of MRM.
4. West of Jadibuti, South of Tangiya Basti and some part of Haraiya VDC.
5. West of Pasaha Khola, North of Lamidada, East of Padam Road.
6. Land Occupied by Sugar Mill.

All of these are government owned land and were considered under modality 4 for resettlement. Among them the most preferred by the residents of all three communities was site number 4. The land is owned by Herbs Production and Processing Co. Ltd. Of Nepal has been occupying 700 bigha of land. When asked by residents, the reason for their preference, they said the land was fertile and resonated more with their existing living conditions. All three settlement preferred this area.

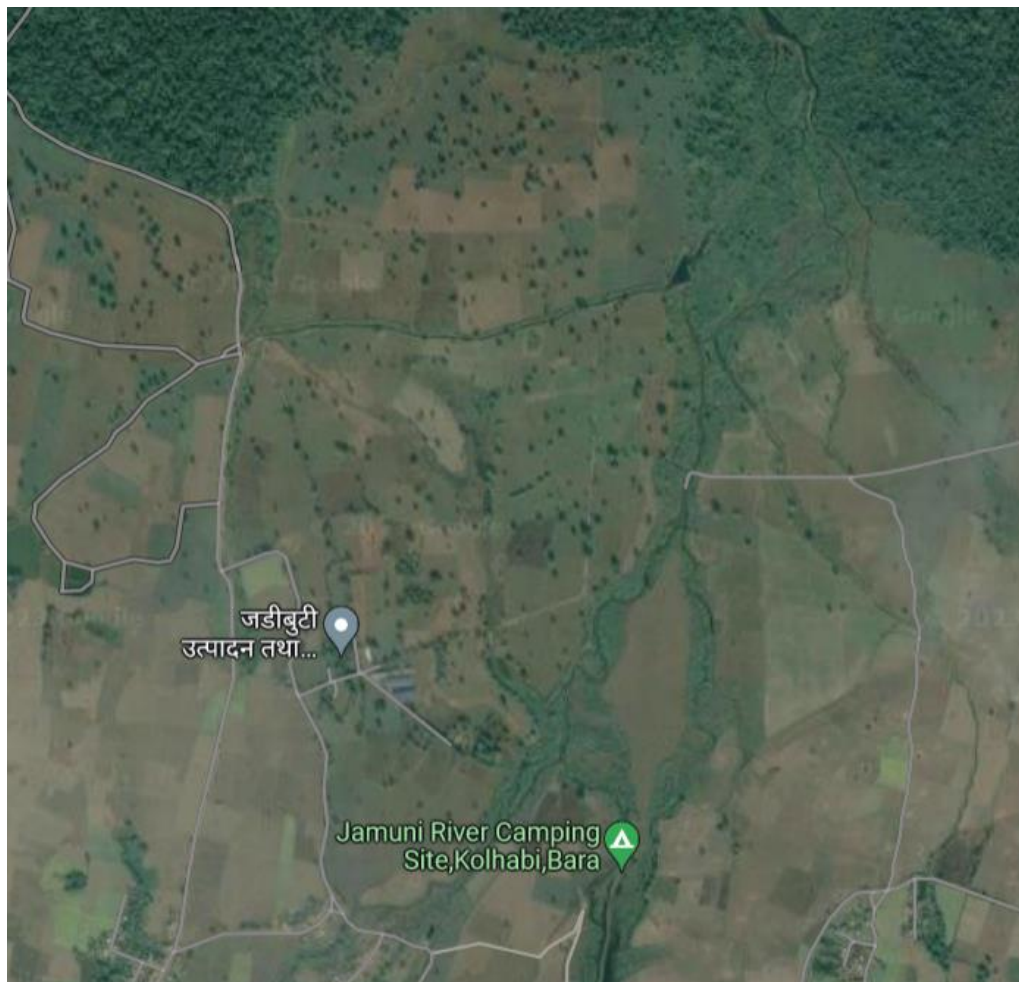


Figure 144: Jadibutti

With existing models of resettlement, a top-down, trickle-down, blueprint-planning approach, where subsistence and traditional sectors (i.e., production and social support) are often neglected as in case of Narmada River basin can lead to social and economic disparities in the communities and further lower their standard of life.

The EIA report states that the project will provide counselling services to affected people for the effective utilization of cash compensation. But, on overlooking the cash compensation that has been provided in Kathgaon, no such mention was made my residents about the counselling services.

As per the report, at least a member of each family of community will be employed during construction process of airport. For the employment after the construction the report states they will be provided with an identity card, wherein it will state, “the card holder is one of the members of affected family who were displaced from their dwelling for the construction of airport. CAAN requests all the business enterprises related to SIA to consider their sacrifice while selecting employment in their business enterprise.” But the report fails to address any employment plan for the people in long term which could push them to further poverty and lower their way of life.

The EIA for the project discusses some of the issues pertaining to physical and economic impacts. However, no specific Resettlement Action Plan has been prepared as of yet for the proper resettlement of the communities as the government is still in dilemma.

6.9.3. Social and Economic Challenges in Resettlement

Resettlement is a complex dynamic which needs to carefully plan else could create further disparities as in the case of resettlement of Narmada River Basin. When looking at resettlement itself, there are various challenges which might affect the process of resettlement, one of them being vulnerability of the displaced people. When people affected by the development projects are excluded from the process, they feel powerless and more susceptible to social disintegration and economic deprivation.

Some of the major economic and social challenges which need to be carefully considered in resettlement dynamics are:

Economic Marginalisation:

1. If the communities are provided with land compensation, they will shift to newer urban areas. But since most of the community is involved in agriculture leaving residents grappling with the issue of finding new source of income.
2. Lack of skills could also reduce the possibility of new employment.
3. Many economic activities specific to settlement such as cattle rearing, weaving carpets might also be lost.
4. Strain existing infrastructure and services of the new area they accommodate to, leading to inadequate living conditions.
5. Inadequate compensation which can already be seen in the case of Kathgaon where many people are unhappy with the compensation.

Social Disintegration:

1. Loss of the identity of the people as community.
2. If provided with land compensation, people will move to different areas which could lead to loss of the cultural heritage and isolation in existing rituals.
3. The inflow of displaced people into new areas can burden on the existing relationships already in place, leading to tensions and confrontations between newcomers and locals.
4. Psychological issues because the settlement have been living in the area for a long period of time.
5. Those who have been forcibly relocated can see a decline in their social standing and be required to pursue novel and unusual means of subsistence.

In an interview with Pramod, doctor in Tangiya basti, discussing regarding the challenges of resettlement, he expressed, “In terms of resettlement social and economic factors are crucial. There are many factors such as employment opportunity, flexibility of working, social relationship with the new neighbors etc., these all could pose an issue in terms of resettlement which also need to be considered.”

When discussed with the communities in terms of what can be done to improve their employment opportunities, some of the residents mentioned that trainings can be provided to men for driving, cattle rearing, etc. and women for beauty parlor, sewing, embroidery and both for working in different factories etc. For people who are more educated, technical training could be provided.

7. Recommendations

As per Government of Nepal and international laws, it is recommended that as far as possible the involuntary resettlement should be avoided. If it isn't possible to avoid the displacement, the projects should identify the environmental and socio-economic costs to minimise in planning process as much as possible for smooth transitioning of the communities that are affected to new relocated settlements.

As seen from the discussions above, most of the people in these communities tend to incline towards resettlement than land compensation which is very integral to conserve their identity, practices and way of life. So, it is essential development projects understand this and give more weightage to resettlement rather than compensation policies. Compensation policies do ensure compensation for individuals as per market rate as stated by laws in Nepal but this leads to community diverging to live in different places losing their identity as a community and also raises many concerns such as isolation in new places, loss of culture identity and heritage, burden on existing infrastructure and many other. Moreover, these families have a harder time adjusting to the new environment disrupting their way of life and traditions.

While studying the resettlement sites of Narmada Valey Project in Gujarat, many of residents, if not all, showed a strong sense of preference for community-based resettlement (Garikipati, 2002). In case of these communities as well, people showed preference to be resettled with their community preferring the community-based living. Especially in case of indigenous community and Dalits, there is interdependency on their community for living. This further assert that resettlement should be given more preference than compensation for land. Another major necessity is search of safe land within the proximity of their place of origin. This can also be a challenge as finding land in recommended budget might be difficult so there is a need to look into land options during the project planning itself.

7.1. Laws and Acts Regarding Resettlement in Nepal

On reviewing the laws and acts prevalent in Nepal, there is a clear mention that involuntary resettlement must be minimized or avoided when feasible by exploring other alternatives. Also, clear provisions are outlined in case the people losing shelter and livelihood will be assisted ensuring that they receive support to enhance or, at the very least, restore their previous

standard of living without incurring any personal costs. Land Acquisition Act has not given much consideration to many of the important aspects of resettlement such as compensation to squatters, encroachers; consideration to vulnerable groups, etc. On the other hand, Land Acquisition, Rehabilitation and Resettlement Policy (LARRP) 2015 recognizes landless and indigenous people under vulnerable groups and necessitates the importance of offering them advantages for rehabilitation and resettlement.

- The act also specifies provision of Social Impact Assessment (SIA) which is integral to identify vulnerable and indigenous groups.
- The LARRP (2015) has provision that project proponent will ensure the resources required to rehabilitate the livelihood of the affected individuals/families (7.1.3).
- The LARRP (2015) has provision of additional assistance and inclusive programs targeting these groups to uplift their socio-economic status (7.2.7).
- Strong emphasis is also given to ensuring basic provisions of infrastructure and development of livelihood to ensure their living standard doesn't lower.

Some of the gaps identified in the laws and acts are mentioned below:

1. Even though there is mention of resettlement and compensation, detailed plans and policies on involuntary resettlement for vulnerable communities are yet to be developed in Nepal, leaving communities further vulnerable during the resettlement process.
2. In context of compensation that is mentioned as per the act, more attention is given to compensation at the replacement value but other than that the resettlement and rehabilitation benefits is not specified clearly. More preference should be given to resettlement and rehabilitation benefits.
3. Also, after resettlement there is a significant period which is needed to the displaced people to resettle to their lives. There is much attention given to the process itself but careful consideration is also necessary for the transition period for them to settle to their new lives. Special consideration should be given to the needs of displaced people especially vulnerable groups during the transition period. Laws and act in Nepal do not have policies and activities to sustain their needs in transition period which should be included and prioritized.

4. Environmental and Social Management Framework does mention of Resettlement Action Plan but laws do not clearly specify it. This is very integral and policies should make resettlement plan in case of infrastructure projects compulsory as this includes social assessment to measure impact on vulnerable groups and their needs. There needs to be specific mention and detailing of Resettlement Action Plan in LARRP.

5. The Land Acquisition Act of 1977 in Nepal is the main legislation governing involuntary resettlement, but there are complications in determining the cut-off date for compensation due to lack of a regulatory framework and variations in survey completion dates. The prevailing practice is to consider the date when the chief of Compensation Determination Committee (CDC) publishes a public notice of Land Acquisition as the cut-off date for land transactions and asset documentation.

7.2. Policy Recommendation

The following policies should be implemented by Civil Aviation Authority of Nepal (CAAN) as it is the primary body responsible for the proposed airport. Additionally, the National Planning Commission (NPC) may also be a supporting actor in policy coordination and guidance. The other supporting actor will be the Local Government in advocating the needs of the local communities and ensuring active consultation and participation of local communities. Below are the policies recommended after brief review of existing literatures, case study and analysis of research findings:

S.No.	Policy Recommended	Responsible Authorities	Plan of Action
1.	Ensuring active consultation and participation of local communities including the vulnerable population in decision making process that impacts their livelihood.	Civil Aviation Authority of Nepal (CAAN); Local Government; Community Groups such as Tangiya Sarokar Samiti; Representatives.	Meeting with stakeholder along with affected communities giving particular attention to minorities, dalits, women and vulnerable population.

			Impact assessment such social and economic impact assessments.
2.	Identification of vulnerable population such as indigenous, dalits and other minorities whose needs might need immediate attention.	Civil Aviation Authority of Nepal (CAAN); National Planning Commission; NGOs; Municipality, Ward.	Conduct a thorough survey to identify vulnerable population.
3.	Integrate provisions to preserve the cultural traditions and identity of the displaced communities.	Civil Aviation Authority of Nepal (CAAN); Ministry of Culture, Tourism and Civil Aviation; Local Government and Local Communities.	Grants to relocate cultural places and safe space to continue their traditional practices. Measures to re-establish or re-develop lost community resources.
4.	Incorporate strategies to restore their livelihood to better if not, at least, to its present condition.	Civil Aviation Authority of Nepal (CAAN); Development Partners.	Vocational Training, Income Generating Schemes; Subsidies and Grants; Financial Assistance
5.	Ensure the communities have access to infrastructure.	Civil Aviation Authority of Nepal (CAAN); Ministry of Urban Development; Ministry of Physical Infrastructure and Transport; Nepal Electricity Authority.	Physical infrastructure such as water supply, road, electricity, transportation etc and vital social infrastructure such as schools, hospitals etc.

6.	Integrate resettlement policies that are socially inclusive and gender sensitive.	Civil Aviation Authority of Nepal (CAAN); National Planning Commission; Social Welfare Council; Development Partners.	Inclusion of diverse group of people in decision making process. Ensuring the livelihood opportunities and providing assistance for single women. Grants for women led enterprises.
7.	Implement owner driven land buying process – The owners of the displaced place should be given opportunity to have a say in resettlement process to choose the location where they would resettle.	Civil Aviation Authority of Nepal (CAAN); National Land Rights Forum; Community Groups such as Tangiya Sarokar Samiti; Representatives	Transparency in participation so that owners’ preferences can be understood.
8.	Provision of Government and Non-government partnership programmes for resettlement.	Civil Aviation Authority of Nepal (CAAN); Development Partners; Local Government.	
9.	Promote Joint Land Ownership in displaced relocation for inclusion of women along with men in land ownership certificates.	Civil Aviation Authority of Nepal (CAAN); Ministry of Land Management, Cooperatives, and Poverty Alleviation; Local Government.	Legal support for women’s land rights. All the legal process of documentation and land registration should be facilitated.

10.	Prioritize local materials, knowledge, skills, labour and craftsmanship in construction in resettlement process (Adopted from National Building Policy)	Civil Aviation Authority of Nepal (CAAN); Ministry of Urban Development.	Mention of use of local materials and skills in the guidelines. Promote local craftsmanship and displaced people as labors in construction.
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7.3. Operational level Recommendation

7.3.1. Land

1. In case of cash compensation; the market price of land along with transaction cost should be compensated.
 - All fees and taxes on land and/or house transfers will be waived or otherwise included in a compensation package for land and structures/or houses or businesses.
 - Land will be compensated “land for land”, or in cash, according to PAP’s choice whenever possible (LARRP).
 - Assistance in rehabilitation of livelihoods (LARRP).
 - Advance notice should be given for relocation.

2. Since all three communities have vulnerable groups associated; preference should be given to land compensation (as shown by the survey and interviews). For land compensation, the hectare can be decided by the committee considering all the aspects.
 - Identification of indigenous, people below poverty line is needed.
 - List of affected and entitled persons and the area of and loss is required.
 - List of available Ailani land in each affected wards is required along with squatters, encroachers and land owners.
 - Informal settlers and encroachers should also be entitled to the compensation.

- All the legal process of documentation and land registration should be facilitated by the respective authority.
3. Affected people should be relocated as community in accordance with their preference. Participation should be given importance and the affected communities should be consulted and be in loop regarding decision relevant to resettlement.
 - Meetings should be done with involved stakeholders along with affected community members for a successful resettlement project.
 - Priority should be given to hear voices of women, poor people and vulnerable communities.
 4. Each household should be provided with agricultural land irrespective of their existing economic status. For agricultural land, every son and daughter above the age of 18 should be considered separate and separate land should be allocated for them to meet the needs of the family.
 5. Relocation should be done at minimum distance from their original place of living.
 6. To ensure fair compensation, determination of rates should be established not more than one year prior to property acquisition.
 7. Market value as replacement cost for trees and crops will be provided.
 - Advance notice to harvest crops is required.
 - Loss of non-perennial crops (standing seasonal crops) will be paid in accordance with the output value by the committee as per market rate.
 - Compensation for loss of fruit trees.

7.3.2. Housing

1. Cash Compensation for all affected structures at the replacement cost, without any depreciation of the structure and without deduction for salvageable materials/
Resettlement along with housing structure shall be provided with compensation for other assets.

- If a family is not willing to accept the built house and want to build house on their own, compensation amount should be provided.
 - The existing vernacular architecture elements of houses should also be considered while planning new houses for community for relocation. (For e.g.: in Tangiya basti, since most of the community is Tamang and their existing houses have Tamang household look which should be replicated in the new location).
 - Similar space management/architecture can be integrated to make them feel more comfortable at relocated space.
 - If a family is building house on their own, subsidies should be provided for them to use local materials.
2. Every household will receive transportation allowance on actual cost basis.
 3. Replacement cost of temporary structures built (shed, outdoor latrine, rice granary, etc.)

7.3.3. Infrastructure

1. Access to physical infrastructure such as water supply, electricity, roads, etc.
 - Provision of drinking water facilities by laying pipelines and hand pumps in the community.
 - Street lightings should be provided for safety and security on night time.
 - Transport should be accessible from the relocated area.
 - Network should be available in the resettled area.
2. Access to social infrastructure such as schools and hospitals.
 - Primary health post should be present in each community with all the necessary health care supplies.
 - Primary and secondary school up till 12th standard should be present in the communities.
3. Grants to restore temples, churches, Ghats, etc. as per consultation with the affected communities.

7.3.4. Social

1. Some social gathering space should be present where people can sit and gather after their work.
2. Social networks of existing plots need to be also considered for relocation – a choice in choosing their resettlement site.
3. Identification of indigenous and vulnerable communities such as Dalits for consultation and prioritizing their needs.
4. Understanding the disproportionate socio-economic impact relocation has on women, children and senior citizens and assisting them in relocation; providing women opportunities to be employed.
5. Measures to assist impacted communities to re-establish or re-develop lost community resources.
4. Religious places such as temples, church, gumba etc. should be present in accordance with the beliefs of the community.
5. Subsidies/Compensation for construction of community resources.
6. Assistance to communities to preserve their existing cultural practices and identity.

7.3.5. Economic Opportunities

1. Jobs should be reserved for the displaced community people and their family members in the development project.
2. People of the affected communities should be provided with a recognition card to get employed in the project itself.
3. Trainings to the people with no skills should be provided to work as labor or construction worker in the project. Women need to be equally considered; priority will be given to vulnerable households.
4. Allowance to people until the training period.
5. Trainings can be provided in driving, mason, computer training, tailor, beauty parlors etc.
6. Opportunities to continue growing crops like maize; banana etc. in TB and sell them to nearby markets.
7. Trainings to the animal herders in agriculture or other fields for skills upgrading.

8. Use the opportunities of existing skills like carpet weaving to generate employment opportunities and income. Employment can be provided to women with trainings.
9. Provision should be made for food and grains up to a time period until the people can resettle to their new livelihood.
10. Employment opportunities for women to make them self-independent.
11. Measures to assist impacted communities to re-establish or re-develop lost community resources.
 - Monthly subsistence to the affected household until a year.
 - Provide subsidies to open their own small-scale business-like beauty parlor, tailoring, auto rickshaws etc.

7.3.6. Rehabilitation Benefits:

1. Counselling on impact of the project.
2. Assessment of existing economic conditions to provide counselling on income generating schemes and employment opportunities.
3. Counselling on entrepreneurship skills.
4. Establishment of small-scale industries to provide employment opportunities.
5. Counseling to individuals and families facing challenges due to traumatic relocation.

8. Conclusion

In conclusion, the research emphasizes the dynamics that exist between local communities and their ecosystem, particularly in the context of development projects. The growing effects of deforestation, rising temperatures worldwide, and biodiversity loss highlight the need to protect green places and conserve natural resources. The study emphasizes how local and indigenous communities are directly impacted when displaced from their lands and it affects all the domains of their lives.

Looking at the human environment relationship of the communities, the findings show that most of their economic activities are primary activities such as agriculture, cattle rearing, chopping firewood and collecting non-timber forest products etc. They are dependent on the ecosystem for social relationships such as cremation of bodies in nearby rivers, communal activities such as going in groups for cattle grazing, Asari puja etc. There is prevalence of human wildlife conflict as well but many people see these elephants as a form of Lord Ganesha. These ecosystems also have cultural and social meaning to them which also gets lost hampering their identity as a community and disrupt their way of living. The communities protect the biodiversity and also depend on them. So, it has never been more important to build a sustainable relationship with the landscapes and ecosystems that are essential to infrastructure and development in the face of growing demands from climate change and population growth.

The findings reveal how infrastructure projects can hinder development, depriving communities of access to basic infrastructure services for years. The proposed expansion also raises issues such as economic marginalization including economic disparities; loss of existing way of income, unemployment and social disintegration such as loss of identity; rituals and cultural heritage, decline in social standing; loss of dependence of forest ecosystem which affects their living standard pushing them further into poverty. It can be concluded that the construction of proposed airport has put these communities' lives in limbo affecting the basic provisions such as electricity, communication, proximity to schools and hospitals etc.

In case of these communities, Kathgaon has received cash compensation while no decision has been made regarding other two communities. The research reveals people are discontent about the cash compensation and have preference towards community-based relocation with all basic infrastructure provisions for all the three settlements. Also, participation in terms of decision regarding these communities seem inefficient. The discussions specify most of the people in

these communities tend to incline towards resettlement than land compensation which is very integral to conserve their identity, practices and way of life. So, it is essential development projects understand this and give more weightage to resettlement rather than compensation policies. A proper Resettlement Action Plan made in par with active consultation and participation with affected communities; giving particular attention to the voices of vulnerable population is imperative. These policies need to be inclusive and gender sensitive replicating their existing way of live; integrating the social dynamics and network of these communities along with upliftment of employment opportunities through vocational training, financial assistance, subsidies, grants etc.

In conclusion, the research tries to show the dynamics that exist between local communities and infrastructure projects; along with the implications on their livelihood. Since much study has not been done about this relationship in context of Nepal, researcher seeks to shed light on the dimensions of human-environment relationship to foster a more comprehensive understanding of the complexities involved in such large-scale infrastructure projects. This research serves as a guide for policymakers, government organisations and stakeholders involved in this project.

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ANNEX I - Household Surveys

The household interviews and Key Informant Interviews were done in all the three settlement, Kolhabi, Nijgadh and Jitpur Simara Municipality.

Table 7: List of Household Interview Personnels

S. No	Settlement Name	Name of the Interviewee
1	Tangiya Basti	Ramkumar Ghising
2	Tangiya Basti	Sanjay Moktan
3	Tangiya Basti	Dhanvir Moktan
4	Tangiya Basti	Hajarilal Chaudhary
5	Tangiya Basti	Sunita Vishwakarmi
6	Tangiya Basti	Mina Poudel
7	Tangiya Basti	Dilbahadur Poudel
8	Tangiya Basti	Kharimaya Gole
9	Tangiya Basti	Mina Giri
10	Tangiya Basti	Homkumari Adhikari
11	Tangiya Basti	Nabin Adhikari
12	Tangiya Basti	Kamal Bahadur Adhikari
13	Tangiya Basti	Sujan Bhatta
14	Tangiya Basti	Govinda Acharya
15	Tangiya Basti	Anonymous 1
16	Tangiya Basti	Anonymous 2
17	Tangiya Basti	Anonymous 3

18	Tangiya Basti	Suman Lama
19	Kath Gaun	Vikram Chaudhary
20	Kath Gaun	Bikau Chaudhary
21	Kath Gaun	Birendra Chaudhary
22	Kath Gaun	Funda Singh Tamang
23	Kath Gaun	Shanti Man Karki
24	Kath Gaun	Birendra Thakur
25	Kath Gaun	Tek Bahadur Khulal Magar
26	Kath Gaun	Nagesh Prasad Chaudhary
27	Kath Gaun	Kabita Chaudhary
28	Kath Gaun	Laxmi Devi Chaudhary
29	Matiyani Tole	Ramawadh Hajara Dusadh
30	Matiyani Tole	Rajeshwar Thakur
31	Matiyani Tole	Lalita Devi Kusuwa
32	Matiyani Tole	Palti Devi Ram
33	Matiyani Tole	Kalpathiya Devi Ram
34	Matiyani Tole	Dhanesh Hajara
35	Matiyani Tole	Chanda Devi Mahara
36	Matiyani Tole	Rakesh Prasad Yadav
37	Matiyani Tole	Swagin Devi Thapa
38	Matiyani Tole	Bijay Mahara
39	Matiyani Tole	Rita Devi Kusuwa

40	Matiyani Tole	Sikinda Ram
41	Matiyani Tole	Amar Mahara
42	Matiyani Tole	Raj Kishori Prasad
43	Matiyani Tole	Rajinder Hajara

NOTES OF HOUSEHOLD INTERVIEWS

1.Raj Kumar Ghising, Auto Driver, Tangiya Basti

Q: In 1950s, the people were brought it for plantation, but when we look at the community now, it has grown significantly, why do you think that has happened?

A: Initially, the 200 – 300 households were brought in by government itself for the plantation and people settled here. In midst of all that, after certain point, “janyuddha” started, the government also didn’t look into this at that period. Even, the police administration was a bit reluctant to enter the forest at that time, so the people who came there for plantation also thought they would get land there for farming and living. The Maoist had also intervened and assured them that this is their own country, this is their own place and asked them to continue their farming and settling there. After receiving support from the Maoist, the trees that were under plantation were destroyed and people started living here with assurance. But at that time, they couldn’t construct proper houses, instead in one night itself people would cut small logs and construct small houses and do all the arrangement within the night itself, and live as their own land by morning. If they found you constructing a new house in the morning, they would burn the house. It was at that period that they got assurance from Maoists and started living there as they owned the land. Slowly, since jungle has a lot of trees, they would get wood from the forest and construct proper houses for themselves in their own land. Now, since it’s been a long time, the population also increased slowly since most of the families have now almost lived four generations in the same area. The settlement settled here in 2032 BS which is now almost 50 years ago, that is also the reason the community is growing. That not being the only reason, the relatives also told their other relatives about the living here and some families mostly relatives also migrated here. The relatives were also assured that it

was okay to live there because their own relatives have been living there for years. If you add up 1-2 relatives of all 200 households, then it automatically adds up to 600-700 households. Also, the sons and grandsons after growing up cannot live in the same house as well, so they also separated land and started living in their own houses. Due to these reasons, the community has been growing over the years.

Q: Do you think your community has also played a role in the destruction of the forest?

A: Our community had a discussion with Forest Division Office to involve our community and help with the conservation of the forest. We also conveyed that the forest can be protected and conserved if the community invests itself in the process else it would be difficult as everyday trees are being cut down and needs to be monitored. But in terms of destruction of forest, most of the outsiders blame our community for it but in actual fact, most of the woods and forest are also being cut by outsiders. Due to which, we decided to make a samiti of 25 people from different tole to do the reki of the forest every day. That way we can also protect the forest and stop trees from being cut.

When Debu Kharel (not sure of the name) had come, we even executed this proposal, but after that Forest Division Office concluded that the forest cannot be conserved this way and the reki was cancelled. After that, the carelessness started again in terms of the forest.

Q: In context of resettlement, has there been any discussions?

A: The discussion of resettlement is limited to talks only. Earlier, they had shown us an area on left end, there are many government plots where jadibuttis are grown, you can reach there after crossing the jungle.

Q: Do you think you would be willing to resettle there?

A: Yes, it is possible, but there are other problems there as well.

Q: When we talk of resettlement, the community has been living here for years, how do you think this will affect the social and economic dimension? Has government talked about measures in context of social and economic dimension?

A: We don't think we can trust the government, thousands of times there has only been talks but no action has been taken for so long. The Supreme Court halt the construction saying that the area is not convenient for the construction and alternatives should be looked into but the

government has been eager to construct the airport. I guess it is important for development, if government feels this is a necessary project, then it must be constructed, but with that they should look into our demands as well. We have demanded proper resettlement of the basti with provision of basic infrastructure. Most of the people in the basti, work for livelihood of today itself, most of them do not have any savings, which can be a huge problem for us if government does not intervene. Not all have this living condition, some have lands in other areas and are good to go.

Q: So, talking about the project itself, if proper resettlement of the community is taken care of the community doesn't oppose it?

A: Talking in terms of dissatisfaction, because of the project the local people do not have access to basic infrastructure provision in a municipality, look at the roads itself, I don't think in municipality area people have such basic infrastructure issues as in all roads are gravel roads, the whole community doesn't have access to network communications, in case of emergency, we end up walking from here to there just to have a network range. In case of basic provision like electricity itself, we got access to it only last year.

Q: What about water supply?

A: Before there were public tube wells, and now from these itself through boring, water is available in most of the houses.

Q: This area falls under Jitpur Simara Municipality?

A: Actually, this area should fall under Nijgadh Municipality but Nijgadh border is until the Bakiya river and when we cross the road, other side is Nijgadh as well. When we look at this area geographically, this should have fallen under Kolhabi Municipality. So, what has happened here is, to manage the area and documentation here, any one of the VDCs (at the time this came under VDCs) have to take in charge. But at that time, Nijgadh and Kolhabi Municipality (used to be VDC) refused to take the responsibility of the basti, they didn't agree to take the local community under their ward, and this led to many problems, after which, in the end, this ended up in Dumbarwana VDC. Later this fell under Jitpur Simara Municipality.

Q: When did you move here from Sindhuli? And, why?

A: We moved here from Sindhuli around 2068 BS (2011-2012). The reason we moved here from Sindhuli was to improve our livelihood. My dad died when I was still a kid, after 1 year,

my mom passed away as well. After 8-9 years, we used to live with our grandparents and my grandfather passed away as well. When we turned 14-15 years, my grandmother also was tormented with the nostalgia of the place. Another reason being, the place we used to live in was usually affected by floods due to which all our crops would get destroyed, our houses were destroyed. We realized we couldn't continue living that way. And, my grandmother's brother used to live in the basti, due to which we also moved here.

2. Dhanvir Moktan and Sanjay Moktan, Resident of Tangiya Basti

Q: How and when did you come to live here?

A: The government relocated us here for tree plantation, would live in area for 3 years and once the trees were a little big, we were again shifted to another place within the forest, and that's how we ended up here at the center of the basti.

Q: Were there so many households when you initially moved here?

A: No, there were not so many households. There was total of 153 households.

Q: How do you feel about resettlement? And, what is your preferred area?

A: If we are provided with proper housing and basic infrastructure in a good place, we are okay with relocating. But, if government doesn't take proper measures in that case, we can't move and of course we will protest regarding this.

Q: Do you think your input was taken for the planning process of the airport?

A: We weren't much involved in the process, it was just conveyed to us that proper measures will be taken for our resettlement but we don't see that happening as well. It has been so many years.

Q: I heard; it is difficult to get network here?

A: It is not difficult, there is no network here. There is WIFI but no network.

Q: What about electricity?

A: We finally have electricity since last year Dashain before that there was no electricity as well in the basti. It's been almost 6-7 months.

Q: Water Supply?

A: We have deep boring now, that is also private as in we have done this by ourselves, we got pipes from the ward office, and we did it ourselves.

Q: Do you have any festivals that is celebrated or any practices in context of forest? (Rituals, dead burial, new born baby)?

A: Some celebrate, some don't. Chettris and brahmins take the bodies to the Bakiya River for burial and we Tamang people bury the bodies in the forest itself.

Q: Do you have conflict with other settlements regarding the forest resources?

A: Not much, but in context of power, yes, they do have more power than us. They fall under Kolhabi Municipality while we are under Jitpur Simara Municipality, so there is a little conflict. But, if we have to look at it as a whole, we are living together harmoniously.

Q: Fire? Floods?

A: There is no issue of floods, but there is fire sometimes in the community. And, fire engines come in that case.

Q: What are our views regarding the construction of the airport?

A: When we look at our country itself, there is a lack of proper airport. If the airport is constructed, it is a good thing, it will be a step forwards towards development for our country. The jungle will also be destroyed in a way, that is true but they have tried to reduce the area previously, the whole forest area from Pasaha River to Tamagadhi Gate was supposed to be deforested. Supreme Court later ordered to cut the trees only in area that is necessary and go in phases. The place is also good as there is no issue of floods and seems convenient for the construction of the airport.

Q: Have you noticed any change in climate?

A: Yes, there seems to be change in climate, it has become hotter. Of course, the trees play an important role in the climate we have here. If you live in Nijgadh and if you live here, you can notice the difference in the weather, it is much cooler here.

Q: Has there been any discussion with you regarding resettlement since budget has been passed by government in this year's budget for resettlement of communities?

A: No, there hasn't been discussion, this has been in talks but there is no new discussion. Recently, a group has come here for soil study and it's going to take a month or so.

Q: If there is any new update on the project or the resettlement, how do you find about it?

A: Mostly through news channels or radio. But there is no direct communication.

Q: If you had to resettle, what kind of employment opportunity would be best suited for you? Are there any skills/training that you want to take part in?

A: Our demand was 2 bigha 5 katha in land. And one person in each household should get job as per their skills. And, government should support us in our livelihood as our primary occupation is agriculture.

Q: For compensation, do you want government to give you houses and resettle the community or compensation?

A: We don't want compensation, where will we go with that money? We cannot buy lands outside; we want government to give us land with houses. The Tharu community has already received compensation as they have lal purja for their land, in Kakadi also there was certain land but mostly agricultural land, they've also received the compensation.

Q: How much of the role do you think Tangiya Basti Sarokar Samiti plays?

A: They also have been involved in the demands for the basti.

3. Hajarilal Chaudhary, Resident of Tangiya Basti

Q: What about water supply and electricity?

A: Earlier, the water supply source was tube well. But now, after deep boring, water is available in all houses readily. We have done it ourselves though but still some houses do not have the boring at their homes yet so they have to travel to a distance to collect water. Electricity also reached to our basti during elections.

Q: What do you use the forest for?

A: Goat rearing.

Q: What are our views regarding the construction of the airport?

A: If the airport is constructed that is a good thing but before that is done, it is necessary to accommodate the people here into other homes.

Q: Do you think your input was taken for the planning process of the airport?

A: I think a meeting was held in the basti regarding airport but I was not present here at that time.

Q: Do you have conflict with other settlements regarding the forest resources?

A: The relationship is good; we don't have any conflict with other communities.

Q: Since you live in rent here, where will you move to if the airport is constructed?

A: I will go back to my own house in Rautahat and open a shop there.

Q: Have people been compensated for their lands here?

A: The compensation has been given to Kathgaon, but nothing has been distributed here yet. People here do not have lal purja but the municipality has given "nissaa" to the land owners. Nissaa is like a proof of how much land do the land owners own.

Q: So, does Nissaa help in selling and buying lands as well?

A: Selling or Buying land here is like buying vegetables in a market. Here, they measure the land plot and write it in a paper that this is your land and the land is transferred to another owner. Five to six other people are present there during the process as a proof of the land being sold.

Q: Can people from outside still come and make home here in any piece of land?

A: No, now they have fenced the land around as basti's border so that people can't destruct the forest to make new homes. And internally in the basti, you have to buy land.

Q: How do you feel about the destruction of forest for the construction of the airport?

A: The airport can be constructed in the area this basti is settled only as well without cutting the forest. This is a huge area.

Q: Do you face any human wildlife conflict that affects your day-to-day life?

A: The basti is always in fear of elephants and tigers. Many people have also died as a result of human wildlife conflict. Recently 2-3 months ago, tiger killed a man here. The area is not very safe especially in evening and night this regards because we are surrounded by jungle on all 4 fronts. In context of elephant, they destroy all the crops. Main crops grown here are maize and banana which are sold outside and usually these are all destroyed by elephants.

4. Sunita Vishwakarmi, Resident of Tangiya Basti

Q: Do you have lal purja for this land?

A: We do not have lal purja but Nissaa was distributed 5-6 months earlier by ward itself.

Q: What are your major sources of expenditure?

A: In terms of expenditure, we are just 2 people so most of our expenditure is in food, which comes to around 15000 monthly. Except for that renovating the house has been a huge expense.

Q: Have you taken any loan for the renovation expense?

A: Yes, we have taken a loan of Rs. 5 lakhs from Sahkari Sanstha at an interest rate of 16%.

Q: What do you use the forest for?

A: When I was 10-12 years old, we used to go to cut firewoods, but after that I haven't gone there. I came back to Nepal 3 years ago, I lived abroad for 12 – 13 years.

Q: Have you noticed any change in climate?

A: Yes, there seems to be some change in climate, it has become hotter from this year.

Q: What are our views regarding the construction of the airport?

A: The construction of airport is a good thing for national development and they can relocate us o some good area with provision of basic infrastructure. If the fast track and airport is constructed, this will also increase the economic linkage between areas. Kathmandu will be only an hour away from here, also Indian border is also very close from Kolhabi Municipality so if we see that way this will also bring along different economic opportunities to the area, but it's been so many years with the news of the construction of airport.

Q: How do you feel about the environment destruction that it brings along?

A: Of course, the destruction of environment is a bad thing, this will disrupt the lives of the wild animals that live here as well.

Q: Are there many wild animals here?

A: Yes, there are different species of animals here. Two people were attacked by tiger few months ago but we don't really go to the jungle. Elephants come here very often.

Q: Fire? Flood?

A: No, there isn't anything as of such.

Q: How will you and your family be impacted if the construction of the airport continues and land acquisition happens?

A: The major impact will be losing our land and house, but we are hoping government will resettle us to a new area. But in terms of social and economic factor, we will not be impacted much. My husband is a doctor, so one of the main reasons that we have stayed in the community is so that we can setup a clinic here itself.

Q: For compensation, do you want government to give you houses and resettle the community or compensation?

A: I don't think that is something that we have much control over. If the government could resettle into new houses that would have been nice, but we don't know what kind of houses would they build for us. It wouldn't be house like we build for ourselves. So, I would prefer if we get compensated so that we can construct our houses on our own, instead land compensation would be better.

Q: Do you have any area that you think would be best suited for resettlement?

A: We have heard that there is enough land in Jadibutti. There are other areas that were talked about but from what I have heard, Jadibutti is most appropriate for living and resettlement. There are some small water streams as well, weather is also good, so it seems a good place. If government wants to go with resettlement, all we demand is that we are able to live the same way that we live here if not better.

Q: Do you think proximity to market area is difficult situation for you?

A: Not really, most of the necessary shops are present inside the basti itself. Only if we need some good clothes, we need to go to Nijgadh/Kolhabi Market else for day-to-day life most of the goods are available here.

Q: Do you think men and women are treated differently in the basti? Also, how do you feel about the safety of women in the community?

A: No, there is nothing as of such, women feel very safe in the community.

5. Mina Poudel and Dil Bahadur Poudel, Resident of Tangiya Basti

Q: What do you use the forest for?

A: (DB) Earlier, I used to go to the forest to cut wood, but now I am too old for that.

Q: Do you face any human wildlife conflict that affects your day-to-day life?

A: (DB) There are wild animals here, elephants come sometimes. This forest is their home, it is their place before us, in a way they are also gods, a form of Lord Ganesh. (MP) Elephants come as per season and they eat up the maize and crops. 3-4 months earlier, a man died due to elephants just down this road itself.

Q: What are our views regarding the construction of the airport?

A: (MP) We would prefer if the airport was not constructed, the forest will be destructed and we will have to leave the place and we might not even get land to live.

Q: How do you feel about resettlement?

A: (MP) We haven't been informed about resettlement, they haven't told us yet where will we be resettled to. (DP) It's been many years since they have been telling us about resettlement, but nothing has been done. Even people got tired and brought electricity, water supply to live here itself. There was no electricity, this whole area used to be jungle, even the houses were very dispersed. Now, the community has also grown, there are so many houses now. In some houses, sons have separated and live in different houses, some people's relatives migrated here, many old people have died already.

Q: Where do you take the bodies for cremation?

A: (MP) There is a Bakiya river close to Nijgadh, we take people there for cremation in case of Chettri and Brahmins, Tamang take it to jungle.

Q: If you had to resettle, what kind of employment opportunity would be best suited for you? Are there any skills/training that you want to take part in?

A: (MP) If we get this opportunity, that would be very helpful. Maybe towards sewing, embroidery or beauty parlor training could be useful. One person in each household should get employment opportunity in the airport.

Q: For compensation, do you want government to give you houses and resettle the community or compensation?

A: (MP) I don't know, it would be good if we had proper housing with basic infrastructure provision such as water supply, electricity etc. We would want equivalent land to what we have here right now.

Q: Since father is old, for health issues, where do you go?

A: (MP) There is a health center here in the basti but for major health issues, we go to Nijgadh.

Q: Do you have danger of snakes here in the basti?

A: (MP) Many snakes come here, five years earlier before my marriage, a man had also died due to snake but recently I am not sure of any such vents.

Q: What do you think are major issues here in context of infrastructure?

A: (MP) If we don't have to resettle, I would say this place is good for our living, the area and plot size is geometrically planned, I would be happy if we live here itself. In terai, getting a proper land in Terai is not very easy. In case of roads, internal gravel roads are okay but the main road that connects basti to the highway should be pitched, the major roads should be pitched. For us also, moving from here to there with woods and grass would be much convenient.

Q: Fire? Floods?

A: (MP) No, there is no issue of floods here. Even if ends up raining a lot, there is some water logged in the side of road that is inconvenient but it is absorbed in sometime.

6. Kharimaya Gole, Resident of Tangiya Basti

Q: How long have you been running the shop? Is this the major source of income for your family?

A: It's not been very long, around 1.5 years. No, we don't earn much from the shop, it is mostly from farming.

Q: Where do you take these group of maize to sell?

A: Nijgadh.

Q: What are our views regarding the construction of the airport?

A: We would like it if the airport wasn't constructed, we would have to leave our home and place we have lived in for years and move away. We are not even sure what will we do, where will we live.

Q: What do you use the forest for?

A: My husband and son usually go to forest to cut wood and grass.

Q: So, has he faced any threat from wild animals?

A: There is a threat from wild animals in the jungle.

Q: Has there been any discussion with you regarding resettlement since budget has been passed by government in this year's budget for management of communities?

A: I don't really go out much so I don't know about this. I have heard that they will manage our community in case we have to leave here for the airport.

Q: If you had to resettle, what kind of employment opportunity would be best suited for you? Are there any skills/training that you want to take part in?

A: I don't know what trainings but better than being unemployed, if one person from a house can get employment that would be better.

Q: For compensation, do you want government to give you houses and resettle the community or compensation?

A: I am not sure of what they're going to do, but I have heard from people around me that they will resettle the communities into new homes. We just hope that we will not turn into old people by the time government decides to settle us into new places because at that time we won't be able to do much. We have been in a dilemma for far too long, maybe some people who will benefit from it are eager to be relocated but we would prefer if we could continue living here itself. In a way, we have been in limbo, so we would prefer either it to be done or tell us that the project will not be continued here. Even the area has not been developed because of the project. Many people haven't repaired their houses as well because of the dilemma.

Q: Do you think the community has also grown significantly over these 20 years?

A: Yes, a lot. Earlier there used to be 1 or 2 houses in a dispersed manner, now there are so many houses.

Q: Do you think people have destructed the forest area to make their homes?

A: People here do not destruct the forest much, it's the Madhesi community, not only Kathgaon but these are mostly outsiders that have been destroying the forest. People come from nearby areas and cut the trees and have been destructing the forest. We are scared of these people because if they see us, they might even kill us.

Q: Is there a power imbalance here?

A: Many of Pahadis have been killed by these people who come to cut woods. Earlier when there were no tube wells, we would have to go to stream to get water for us. And women felt unsafe at that time because of these people.

Q: So, before boring, you had to go to rivers to get water?

A: No, there were tube wells in the settlement, people used to go to tube well and collect water in turns for their home. We used to wait in queue for 2- 2.5 hours to collect water.

Q: What do you think are the major issues in the context of infrastructure?

A: There is road, but if we look at overall in this past year, life has become a lot easier. We don't have to go to tube well and wait in queue to get water. Farming has become easier through water from boring. We have electricity in the settlement as well from last Dashain so these were the two major issues that have been addressed. The air is also good here, weather is cooler

than Nijgadh, only there is threat from wild animals else this place is a very good place to live in.

7. Ramawadh Hajara Dusadh, Resident of Matiyani Tole

Moved from Madhuban in 2061 BS.

Most of the residents of Kath Gaon have been recompensated as per their land but for other two settlements there has been no decision made as of yet. In the settlement, we haven't heard from any of the airport authority personnels after the first visit 10-12 years ago. There is no talk of the Kath Ghat Shiva temple being relocated due to the project.

There is a primary school inside the settlement but no health centre. For health issues or medicines, we go to nearest areas like Madhuban or Jaitapur. He doesn't own the plot of land, they directly moved to the government land. In Sajauli, the land was owned by zamindars of upabhokta samiti, after they moved to Kathmandu, they sold the land which left us landless which is the major reason of us moving here.

In terms of infrastructure, there is no electricity. They have appealed to the ward office for electricity. Three solar panels have been provided by the ward office for the roads for walking at night. For public transport, we get bus which leaves for Birgunj or Pathlaiya around 9-10 am and comes back around 3-4 pm and autos but we need to walk until either Sahajnath Temple.

In terms of wildlife conflict, the major animal threat is that of elephant who destroy the crops. No conflict with other settlements.

Previously there were dangers of floods but since river banking in Pasaha river, the threat is less. The gravel roads were constructed a year ago.

In regards of airport, they do not want compensation, they would need the government to resettle them with basic infrastructure provision as they cannot afford to buy lands. The land prices have also increased. We would prefer if our community can live together in an area. The land has been shown beyond Pasaha River near Dakaha in Gadhimai Municipality.

8. Vikram and Bikau Chaudhary, Residents of Kathgaon

People go out to work from basti earn around 20000-25000 per month.

Regarding transportation, there is just 1 bus of Rajbiraj that is used by people, 1 auto and 4 tractors in the community.

In terms of infrastructure development, the community is far behind Tangiya Basti. Kathgaon does not even have proper roads, there is major issue of floods in the basti. The airport project has hampered the development of community affecting the daily lives of people.

Only one school in Kathgaon from Class 1-5. There is no health centre in Kathgaon, people have to reach Baluwa Bazaar or Madhuwan to have access to hospitals or health centre. The lack of health centre has led to many deaths in village.

In context of forest, every year capital of 60,000-70,000 is collected from entire settlement to do Asari puja. People use forest for cattle grazing and woods; fruits; fishing. Furthermore, Sahajnath Temple is seen as an important temple in the area. Kath Khola is used for cremation after death.

Human Wildlife conflict – Elephants have been quite prevalent, rhino as well. Though elephants have killed people in Tangiya basti no such incident has happened in Kathgaon.

Regarding the construction of airport, it should be constructed but proper planning needs to be done in the context of the resettlement of the communities. Madhesi people are more inclined to live together, it is our culture so, this has proven to be a big challenge for our community as cash compensation has been provided.

Ward has made promises of providing training but no such trainings have been provided, trainings can be provided in working in factories of candles, incense sticks; sewing; beauty parlor trainings.

ANNEX II - Household Survey

Questionnaire

Date of Interview:

Place of Interview:

- I. Kath Gaun
- II. Tangiya Basti
- III. Matiyani Tole

House Number:

1. DEMOGRAPHIC DETAILS

1.1 Name of the Individual:

1.2 Age:

- I. Under 15
- II. 15-29
- III. 30-44
- IV. 45- 59
- V. Above 59

1.3 Gender:

- I. Male
- II. Female
- III. Third Gender

1.4 Marital Status:

- I. Married
- II. Unmarried
- III. Divorced
- IV. Widowed
- V. Others

1.5 Caste:

- I. Tamang
- II. Tharu
- III. Dalit
- IV. Brahmin
- V. Chhetri
- VI. Newar
- VII. Magar
- VI. Others, please specify:

1.6 Language:

- I. Nepali
- II. Tharu
- III. Tamang
- IV. Bhojpuri
- V. Maithili
- VI. Others

1.7 Religion:

- I. Hindu
- II. Buddhist
- III. Christian
- IV. Muslim
- V. Shamanism (Nature Worship)
- VI. Others

1.8 Education Level:

- I. Illiterate
- II. Literate
- III. Pre-Primary Level
- IV. Basic (I-VIII)
- V. Secondary (VII-XII)
- VII. Bachelors
- VIII. Masters or above
- IX. Informal Education

2. FAMILY INFORMATION

2.1 Family Size:

Name, Age, Gender and Occupation of each family member:

(Occupation: Agriculture /Livestock /Fishery /Service /Business /Tourism /Labor /Student /Mason /Remittance /Self-employed / Retired /Housewife /Others)

1. Name:

Age:

Gender:

Occupation:

2. Name:

Age:

Gender:

Occupation:

3. Name:

Age:

Gender:

Occupation:

4. Name:

Age:

Gender:

Occupation:

5. Name:

Age:

Gender:

Occupation:

6. Name:

Age:

Gender:

Occupation:

7. Name:

Age:

Gender:

Occupation:

2.2 If involved in agriculture, what kind of crops do they grow?

3. HOUSING INFORMATION

3.1 Land Area/ Plot Size (in katha):

3.2 Floor Area/No. of rooms:

3.3 Number of Storey:

I. One

II. One and half

III. Two

IV. Two and half

V. Three or more

3.4 Building Material:

I. Stone in Cement Mortar

II. Brick in Cement Mortar

III. Blocks in Cement Mortar

IV. Stone in Mud Mortar

V. Brick in Mud Mortar

VI. RCC Column

VII. Plywood

VIII. Wood/Plank

IX. Others

3.5 Roof Material:

I. CGI

II. RCC

III. Wood

IV. Slate

V. Tile

VI. Others

4. PHYSICAL AND SOCIAL INFRASTRUCTURE

4.1 Electricity (Yes/No) (Solar/Electricity line):

4.2 Cooking – what do they use? (Air pollution?)

4.3 Industries – any nearby? (Is the air being polluted due to any industries?) (any noise that disturbs the wildlife – vehicles, industries?)

4.4 Means of Transportation (Bicycle/Bike)?

4.5 Road Conditions (Condition, access to main roads, proximity)?

4.6 Mobile/ Communication channel?

4.7 Solid Waste Management – How? Where do they throw the waste? Any good or bad practices?

4.8 Liquid Waste Management – where does the waste water go?

4.9 Drainage (Yes/No)

- If no, how does the waste water get drained?

4.10 Septic Tank (Yes/No)

4.11 Source of Water Supply (Tap/Muhan/Well/Tube well/River or Stream/Others) (if well, river or stream, what is the time taken?) (If piped water supply, where is the source?) (In case of tube well have they felt the ground water has changed?)

4.12 How is the quality of water?

4.13 Relationship with neighbors:

4.14 Schools (Number/Proximity)

4.15 Health Post (Number/Proximity)

4.16 Public Transportation

4.17 What are some of the major issues in context of infrastructure?

5. LIVELIHOOD AND ECONOMIC INFORMATION

5.1 When did you move to Nijgadh?

- I. Natives
- II. More than 100 years
- III. More than 50 years
- IV. More than 25 years
- V. More than 10 years
- VI. More than 5 years
- VII. 5 years
- VIII. Less than or equal to 5 years

5.2 Where did you originally live in before relocating to Nijgadh?

5.3 What was your reason for leaving previous place? Why did you choose this place to settle down?

- I. Allocated by Government
- II. Livelihood Opportunities
- III. Land Availability
- IV. Affordable price
- V. Safe settlement
- VI. Lack of suitable alternatives
- VII. Near to original residence
- VIII. Others, please specify:

5.4 Did you pay for the plot?

- I. Yes
- II. No

5.5 Do you have lal purja for the plot?

I. Yes

II. No

5.6 Income of the household (in NRs per month) (in thousand):

I. Up to Rs. 10000

II. 10,001 – 20,000

III. 20,001 – 30,000

IV. 30,001 – 40,000

V. 40,001 – 50,000

VII. 50,001 – 60,000

VIII. Above 60,000

5.7 Major source of Income:

5.8 Total Expenditure per month (in NRs per month) (in thousand):

5.9 What is the household's most expenditure spent on?

5.10 Has any member of your family gone for foreign employment?

I. Yes

II. No

5.11 Have you taken any loan from any institution?

I. Yes

II. No

5.11.1 If yes, please specify the amount:

5.11.2 Please specify the institution:

6. ECOSYSTEM AND THEIR RELATIONSHIP

6.1 How old is this forest? What is the history of the forest? (Stories about the forest)

6.2 What kind of relationship do you have with the forest? Do you have any cultural or spiritual significance with the forest or nearby rivers?

6.3 Do you have any festivals that is celebrated or any practices in context of forest? (Rituals, dead burial, new born baby)

6.4 Does Forest play a significant role in your livelihood? If yes, how, what do you use the forest for? (activities)

6.5 Who (else) has access to and/or uses the forest? (People from surrounding villages, municipality etc.)

6.6 Do you have conflict with other settlement regarding the forest resources?

6.7 Do you face any human wildlife conflict that affects your day-to-day life? (elephant's route?)

6.8 Are there any community organizations or groups actively involved in forest conservation and environmental advocacy in your area?

6.9 Have they noticed any change in rainfall pattern? Have they changed the crops they used to grow from now due to climate change?

6.10 Fire? Floods? Drought? Cold Wave?

7. AIRPORT

7.1 What are your views regarding the construction of the Nijgadh International Airport?

7.2 Do you think you had a say in the planning process of the airport? What were the aspects wherein you think you weren't properly involved?

7.3 What will be the impacts on the environment if the forest is destructed?

7.4 How will you and your family be impacted if the construction of the airport continues and land acquisition happens?

7.5 Are there any NGOs/INGOs involved that have been helping them or giving airport information?

8. RESETTLEMENT

8.1 Are you okay with relocating? If yes, what is the preferred area?

8.2 Have you been compensated for the land if the airport is to be built? If yes, how much?

8.3 If not, for compensation, how do you think should you be compensated?

8.4 What are your thoughts on resettlement, what is an area that you think would be best suited for resettlement?

8.5 If you had to resettle, what kind of employment opportunity would be best suited for you?

8.6 Do you want to take any skills/training, please specify:

8.7 Do you have any suggestion as to how your livelihood can be improved?

ANNEX III - Key Informant Interviews

Table 8: List of KII Interview Personnels

S. No	Name of the Key Informant	Designation	Place
1	Dev Narayan Chaudhary	Planning Officer	Kolhabi Municipality
2	Laxmi Kumari Chaudhary	Deputy Mayor	Kolhabi Municipality
3	Ramesh Subedi	Focal Person	Jitpur Simara Sub-Metropolitan
4	Kapil Subedi	Secretary of Deputy Mayor	Jitpur Simara Sub-Metropolitan
5	Hari Dev Kharel	Ward Chairperson of Ward 16	Jitpur Simara Sub-Metropolitan
6	Anup Subedi	Ward Chairperson of Ward 8	Kolhabi Municipality
7	Official	Second International Project Office	Jitpur Simara Sub-Metropolitan
8	Ramesh Sapkota	Member of Tangiya Basti Sarokar Samiti	Tangiya Basti
9	Laxmi Devi Chaudhary	School Teacher	Matiyani Tole
10	Pramod Prasad Kurmi	Doctor at Health Post Centre	Tangiya Basti
11	Man Bahadur Thapa	School Principal	Tangiya Basti
12	Vikram Chaudhary	Ward Member	Kathgaon

13	M Bahadur Khadka	Business Owner; Stood in Mayor elections	Nijgadh
14	Khadak Rajsingh Mainali	Construction Business	Nijgadh

NOTES FROM KEY INFORMANT INTERVIEWS

1. Dev Narayan Chaudhary, Planning Department, Kolhabi Municipality Office

The government brought Tangiya Basti people for tree plantation initially to look after the trees. Later the people settled there itself leading to the community growing. The community was already a big community so cannot be said if compensation for airport is a reason for migration of people.

The people in these three settlements are more dependent on the forest, chopping the firewood and selling it for their livelihood. Kathgaon is a pretty old community. The people of Kath Gaon have taken the compensation from the government.

Initially, there were protests regarding the construction of the airport. Before this I was in VDC, they organized a meeting in context of airport wherein there was a discussion about what will it be like, what will be the profit and loss. We raised issues such as drying up of which will also affect the farming because source of the water is in the forest itself. But they assured us that will not be a problem because there is option for that. And, we were informed that the project will help to increase employment opportunities for skilled people here. Talking in context of now, the construction will be good for us. This will be very significant in transfer of people to into more secondary activities and generate employment.

The forest of Nijgadh is already destroyed, that is not forest anymore. It looks like a forest when you look at it from outside but there is not much left internally. Regarding human wildlife conflict, Mostly the animals are there in the National Park, sometimes they cross to the Nijgadh forest mostly elephants. The elephants threaten the crops grown by the settlement. Tigers also come, some years ago, people have also died.

2. Laxmi Kumari Chaudhary, Deputy Mayor of Kolhabi Municipality

If airport is constructed, that would be good for the community. Bara district will gain attention; the community has also been demanding for this development. Until now, the municipality has

no plans and programs in respect to resettlement, the budget will be allocated soon now in regards to the community.

3. Pramod Kurmi, Doctor at Health Post Centre of Tangiya Basti

Started working since 2065 BS in the health centre and the health centre overlooks all primary healthcare and first aid such as maternity services, vaccinations, everyday health issues etc. The basti has health centre as per Government of Nepal's plan of one primary health centre in each ward. The health centre is providing all necessary services. Since the settlement is located in the midst of the jungle, the health centre has played a significant role in terms of health of people.

People do not have any major impacts due to hospitals being at distance because of the health centre. Since there is no network in the basti, it is very difficult to call for an ambulance or any necessary facilities.

In rainy season, there are prevalent 8-10 minor accidents in the main road of Tangiya Basti road.

Compared to past, living in the settlement is much easier now. Previously, living in the midst of the jungle was a threat, there were issues of water supply, distance to the main market was difficult because of lack of public transportation. The community has played a significant role in the development. After the introduction of local government, the government has also played a role in the development of the settlement. Recently, we can see there is budget provisions for basti for different infrastructure like electricity and water supply from this year.

The proposed international airport is a good project for development but displacement for development isn't good for the citizens. The development along with proper resettlement of the community should be an integral part. The development has been in limbo for many years due to the proposed project which in turn causes citizen to deprive of basic infrastructure facilities. Many people in the settlement have not been able to construct proper houses because of the dilemma of the development.

In terms of resettlement social and economic factors are crucial. There are many factors such as employment opportunity, flexibility of working, social relationship with the new neighbors etc., these all could pose an issue in terms of resettlement which also need to be considered.

4. Anup Subedi, Ward 8 Chairperson, Kolhabi Municipality

Kathgaon:

150 households. Very old settlement, Chaudhary people ran during Rana period from Kathmandu and came here. They constructed the Katghat Shiva temple, near which there was an old house, where they stayed hidden. The settlement has lived there since the period of Jung Bahadur Rana around 1800s.

Majority of the population is Chaudhary. Electricity is present in the settlement. There are no major industries near the settlement, a few people travel to Simara to work in factories. There is no public transportation so people are dependent on private transports such as cycles and motorbikes to commute. Major Roads are gravel roads. The mobile network is not there in the settlement. Most of the kitchen wastes are thrown into the fields and rest are burnt. Liquid wastes are also thrown in the fields, most of the houses do not have septic tanks. For water supply, the main source is tube wells, there is no piped water line in the settlement. There has been certain change in ground water level which is declining. The major issues in context of infrastructure are network. People cannot contact hospitals or any personnels in case of emergency operations.

There is one primary school until class 5. Since the children have to travel to nearby towns for further education, so there is also tendency of kids dropping out. There is no health post in the settlement. Almost all the personnels in the community have lal purja. Most of the people are involved in agriculture. 5% of the population – foreign employment.

In context of relationship with the forest, they also believe in forest spirits and pray to them every Ashad through a small puja. The community is also involved in animal rearing so usually they take the animals for grazing in forest. They also cut woods and grass in the forest. They also bring certain vegetables and edibles from jungles such as mushrooms. The community is not much responsible for destruction of forest, initially there has been some deforestation for settlement of some landless people but except that the community lives in harmony with the forest.

Yearly, at least 1-2 people die due to snake bite. There is threat of elephant as in the damage to crops but has not killed people.

The compensation has been received by most of the people of Kath gaon except for the landless people in the settlement. The compensation has been distributed to the community as per the road in the settlement. The development in Kathgaon has not been structured. Most of the people are discontent about the cash compensation given and have raised concerns that government should have resettled them to another location. But people are still living in the area in hopes of getting resettled Also being an indigenous community, Kathgaon' s inclusion in the decision-making process is also not significant. Trainings can be provided in sewing; cattle rearing can be given.

5. Ramesh Sapkota, Member of Tangiya Basti Sarokar Samiti

The airport should be constructed but before that 1476 households of Tangiya Basti need to be managed. The government should provide land compensation and proper resettlement of the community should be done. Some of our demands are: 2 bigha 5 katha land for each household; proper houses; basic infrastructure provision need to be available; availability of food and grain for 1 year until people accommodate to new employment; a person from each household should receive employment as per their skill level in the airport.

825 hectares initially in the airport area, after protests from environmental experts as almost 25 lakh small and big trees will be cut off; petition filed in the court against the project. The Supreme Court issued a statement that airport should not be constructed in the area, community was happy with the decision but after few months, some other petition was filed and the talks of airport restarted doing rounds. Later the Supreme court asked the project area of the airport to be reduced. Due to these talks, the land prices around the area also increased dynamically.

It is necessary that both development and environment need to be taken together.

Geographically, tangiya basti also falls under Kolhabi Municipality but as per administrative boundary, the area falls under Nijgadh Municipality. Even though the airport area lies away from Nijgadh, the airport is called as Nijgadh airport.

The community has been in a dilemma for long time so high time the airport is already constructed. The development of the community is affected and we are getting boring for water supply ourselves, the roads are still not pitched. For water supply, after multiple requests, the ward allocated certain budget.

There have been 3 probable areas for resettlement that we looked: Jadibutti; near Lamidada Parsa and Padam Road (near Pilua and Lamidada).

6. Ganesh Chaudhary, Civil Engineer, Kolhabi Municipality

A very old settlement. There is one primary school in Kathgaon. Most of the people have taken the compensation in Kathgaon and all people in Kakadi, only 5% population who are not satisfied are yet to take the compensation.

The construction of airport would lead to employment opportunities, better economic linkage. There will be issues of water drying up due to deforestation affecting the communities.

7. Kapil Subedi, Secretary of Deputy Mayor, Jitpur Simara Sub-Metropolitan

The construction of the airport will be decided only once the soil testing is done and the feasibility study of the area is done.

Nisaa has been distributed to the residents of Tangiya Basti but that will be only valid if airport is not constructed. Sub-metropolitan is not involved in the resettlement process as this process is separate in the jurisdiction of Central Government wherein mostly the compensation will be land compensation.

Land area of the basti has been constrained so no further forest area acquisition.

No people inflow because of the construction of airport instead it is because of the families growing.

8. M Bahadur Khadka, Nijgadh Municipality

The government 's policy of plantation seems a bit impractical. The initiative of cutting natural, precious sakhuwa tree and re planting sisau trees and bringing people to take care of it seemed a bit impractical. It was done in panchayat era.

The DPR of fast track can be seen as a direct link to Kathmandu from Nijgadh airport.

Airport also plays an important role in creating commercial environment which will increase the economic growth and the linkage of area.

Tangiya basti people also kill a lot of wild animals and sell the meat in Nijgadh market. Constantly the basti has not been effective in wildlife conservation.

Regarding land price dynamics, land price has increased is not due to project. There has not been unreasonable increase in land price relative to other places.

ANNEX IV - Focus Group Discussion

Laxmi Devi Chaudhary – a teacher for 9 years in the school of Matiyani Tole, a resident from Kathgaon

Residents from Matiyani Tole: Rakesh Prasad Yadav, Swagin Devi Thapa, Ramawadh Hajara Dusadh, Rita Devi Kusuwa, Rajeshwar Thakur, Palti Devi Ram, Jagha Ram Mahara



Different people have moved from different areas such as Sajauli, Madhuwan, Sukhi Patra, etc. initially due to land availability and financial constraint (Jagha Ram Mahara).

Farming – wheat. For other crops, there is no proper water source for farming. Ground water has not depleted (Swagin Devi Thapa).

People have voiced their need of basic infrastructure such as electricity, road, but due to the dilemma of the construction of airport, development has been in hold. The community has tried many a times at least for provision of electricity. Also, when comparing themselves to other two settlements, poorer backward community so they cannot afford to leave their everyday work to protest. (Laxmi Chaudhary, Rakesh Prasad Yadav).

Around 2-3 years ago, the whole community along with Tangiya basti was called to Bhumi Adhikar in regards to the airport, where they were informed that for “Ailani” Jagga, same land management would be done for the community as Tangiya basti. Airport authority came to the community once (Laxmi Devi Chaudhary). Tangiya Basti has already received electricity,

while us being in same municipality are still deprived of it. After lot of requests, ward office provided 2 solar panels for road a year back (Rakesh Prasad Yadav).

There were also talks in municipality of reducing these primary schools in the settlement, and the classes in school were reduced to class 2 in Matiyani. Requests were made to Bal bikas Sanstha and Mayor as it is very difficult for kids to go to other areas as the community is located in midst of the forest and rivers, after which the school was maintained up to Class 4 (Laxmi Devi Chaudhary). Many of the students drop out after 4th because they are very young to travel to schools and the schools are far as well. The schools in proximity are: Raghunathpur, Jaitapur or Lamidada (Rakesh Prasad Yadav). In rainy season, going to Jaitapur crossing the river is difficult.

Most of the people are involved in farming, there are no shops in the settlement so people need to commute to other areas such as Jaitapur, Madhuwan for even basic needs. There is no public transportation, to go somewhere, they either need to get help from neighbors in case of emergency or call for an auto from some other area (Rakesh Prasad Yadav). There is a bus but it goes through Gunj Bhawanipur Road of Kathgaon in the morning and Sahajnath Temple road in the evening, but that isn't fixed as well (Laxmi Devi Chaudhary).

Government has given money to make toilets but due to airport, we cannot make pakka structures (Lalita Devi Kusuwa).

There was danger of floods from Pasaha river but the river embankment work is done. Around 8-9 years ago, along with Tanki Devi Subedi of Naya Basti, we went to Halkhoriya, cut the hill and stopped the flow of river. After this the flow of water in Pasaha river is less and there is less danger of floods 4 (Laxmi Devi Chaudhary). There have been incidents of fire as well but people haven't dies in the incident.

Elephants do come to the settlement and destroy all our crops, tigers also come as well. (Rita Devi Kusuwa, Swagin Devi Thapa). Also, some young people from nearby settlements get drunk at night and create fuss in the settlement sometimes (Palti Devi Ram).

In terms of resettlement, there is no point of cash compensation as we are landless people, we need land as compensation (Rakesh Prasad Yadav). Since the community is already poor, with land compensation, the community will be landless again. Managed land with infrastructure provisions (Swagin Devi Thapa, Ramawadh Hajara Dusadh, Rita Devi Kusuwa, Rajeshwar Thakur, Palti Devi Ram). The area near Dakaha is preferred (Ramawadh Hajara Dusadh). More

than that, the river area near main road is more preferred, Jadibutti area (no threat from river as it overflows towards existing settlement and this area is on the other end towards Pilua), we even protested regarding this matter (Swagin Devi Thapa). The land is also vacant and there used to be Jadibutti farming there (Ramawadh Hajara Dusadh, Rakesh Prasad Yadav).

Since most of the people here are illiterate, employment training could be provided such as sewing, embroidery, working in factories like those of incense sticks etc. No one works in factories from this community for now; everyone is involved in agriculture (Rita Devi Kusuwa).

Some people do work as labors in construction works or driving; mostly younger people, since there is not much access to education and children drop out of their studies, which is also a factor for people not getting better employment opportunities. If there was school in closer proximity at least up to 8th or 10th, some children would study further by getting some scholarships (Laxmi Devi Chaudhary).

If airport is constructed that is good for national development (Rakesh Prasad Yadav). Initially since Kathgaon is very close to proximity area, we thought the construction of airport will also bring development to our community (Laxmi Devi Chaudhary). The dilemma of airport construction has exceeded far too long, so if it is to be constructed, it's high time for it to start. The project has decelerated the development of the communities for a very long time (Rakesh Prasad Yadav). Many a times when asking for infrastructure provisions, the airport is given as an excuse to not build proper roads, electricity etc. (Laxmi Devi Chaudhary).

ANNEX V - Time Schedule

S.No.	Proposed Activities	Timeline																			
		Jestha				Ashad				Shrawan				Bhadra				Ashwin			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Literature Review and Conceptualization	█	█																		
2	Thesis Proposal Submission		█																		
3	Presentation of Thesis Proposal			█																	
4	Further Literature Review and Discussion after consulting with the Supervisor			█	█																
5	Revised Thesis Proposal Submission				█																
6	Preliminary Thesis Presentation					█															
7	Literature Review - Case Study: National and International					█	█	█	█	█	█										
8	Consultation with Resource persons and Stakeholders						█	█	█	█	█										
9	Field Visit: Data Collection						█	█	█												
11	Preliminary Analysis of Data Collected from Multiple Sources							█	█	█	█										
12	Cross Case Analysis and Findings								█	█											
13	Mid Term Thesis Report Submission											█									
14	Mid Term Thesis Presentation												█								

ANNEX VI – IOE GC Acceptance Letter and Paper



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इन्जिनियरिङ अध्ययन संस्थान
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Date: November 26, 2023

To Whom It May Concern:

This is to certify that the paper titled "*Understanding Human-Environment Relationship of Local Communities: A Case Study of Nijgadh International Airport*" (Submission# 363) submitted by **Neha Rathi** as the first author has been accepted after the peer-review process for presentation in the 14th IOE Graduate Conference being held during Nov 29 to Dec 1, 2023. Kindly note that the publication of the conference proceedings is still underway and hence inclusion of the accepted manuscript in the conference proceedings is contingent upon the author's presence for presentation during the conference and timely response to further edits during the publication process.

Bhim Kumar Dahal, PhD
Convener,
14th IOE Graduate Conference



Understanding Human-Environment Relationship of Local Communities: A Case Study of Nijgadh International Airport

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Abstract

The human-environment relationship is changing with expansion of infrastructure over the years. While infrastructure expansion is integral to the national development, the associated consequences such as environmental degradation, social injustice and economic marginalization of local communities are often overlooked. This research seeks to understand the relationship between local communities and their surrounding environment; along with the socio-economic consequences due to infrastructure expansion. The research focuses on three settlements in and near the Nijgadh forest of Nepal: Tangiya Basti, Kathgaon, and Matiyani Tole which lie in the project area of Nijgadh International Airport. The research uses both qualitative methods such as Key Informant Interviews (KII), Focus Group Discussions, and Observations and quantitative methods such as Household interview to understand the complex relationship between the communities and development. The findings reveal how infrastructure projects can hinder development, depriving communities of access to basic infrastructure services for years. The expansion also raises issues such as economic marginalization including economic disparities; loss of existing way of income, unemployment and social disintegration such as loss of identity; rituals and cultural heritage, decline in social standing; loss of dependence of forest ecosystem which affects their living standard pushing them further into poverty. The findings shows the dissatisfaction of Kathgaon in regards to the cash compensation and raises concern about the compensation and resettlement process involving these communities. The study addresses the need of active participation and consultation with the affected communities to combat the socio-economic impacts of the expansion.

Keywords

local communities, nijgadh, development, infrastructure, resettlement

1. Introduction

At this fast-changing world, deforestation and many human driven activities cause rise in global temperatures and loss of biodiversity affecting the relationship between humans and environment. Human Environment relationship refers to the interaction of humans with their natural and built environment. One of the important factors of development especially in developing and underdeveloped countries is infrastructure expansion which undermines this relationship. In the course of development and economic growth, the factors such as the environment and the community are intertwined with the consequences of the unregulated expansion and environment degradation.

There are many such projects from Kenya's Railway line [1] to Nijgadh International Airport. However, during the planning of such projects, matters of environmental conflict, lack of community participation and social injustice come into the picture. Despite the undeniable gravity of these issues in the development and planning process, often these factors are overlooked or given very less consideration in such projects. In light of the pressures of climate change and population growth, there has never been a more urgent time to develop a sustainable relationship with our landscapes and ecosystems, in terms of development and infrastructure [2]. The terms of Nijgadh International Airport go way back to 1995 when the government-initiated discussions to construct an international airport of 80 square kilometer in Nijgadh, in the Bara District in

southeastern Nepal [3]. The project remained in discussion but it regained its priority in March 2015. The debate surfaced after government was compelled to an Environmental Impact Assessment (EIA) report which showed that the project required cutting of 2 million trees [4]. In the wake of numerous protests and debate in May 26, 2022; Supreme court ordered the government to halt the construction of Nijgadh International Airport. Surprisingly, despite this ruling, a year later, on May 20, 2023; the government decided to move ahead with the construction process [5].

While most of the studies center around the Environment ethics there is also an anthropocentric aspect that needs to be considered together. The area has three communities; Kathgaon, Tangiya Basti and Matiyani Tol living around. Kathgaon is an old settlement of Tharu Indigenous community of Madhesh origin while Matiyani is a newly established settlement of 39 families of Dalits [6]. Tangiya Basti is a compact settlement of 1476 households which was brought in the area with the concept of Tanguya, a type of shifting cultivation in agroforestry. The dearth of environmental ethics, and social injustices endured by the residents of the local communities asserts the need for research for careful consideration in future development projects. This research aims to address the research gaps pertaining to lack of consideration given to human-environment relationship and the indigenous perspectives of these communities within the context of infrastructure expansion project.

Understanding Human-Environment Relationship of Local Communities: A Case Study of Nijgadh International Airport

1.1 Research Questions

The research question for the study is:

What is the human environment relationship that the local communities share and how will it be impacted due to the construction of Nijgadh International Airport?

Some of the sub-questions that this research tries to explore are:

1. What kind of relationship do local communities at Nijgadh have with their natural and built environment?
2. How do the socio-economic conditions and environmental relationships of these communities change with the construction of the airport?
3. What are the key parameters for resettlement of these local communities?

2. Research Design

The research underlies in the pragmatic paradigm as it recognizes the need of understanding the social experiences and perspectives of the local communities in such large infrastructure projects. The research is an exploratory case study research as it seeks to answer how and what questions wherein researcher has limited understanding of the social problem. The research uses mixed methods as in quantitative methods such as Household Survey and qualitative methods such as Key Informant Interviews (KII), Focus Group Discussions, Observations to understand the problem with more emphasis on later. The research included semi structured in-depth interviews with the individuals of local communities of Tangiya Basti, Kathgaon and Matiyani Tole to understand their stand and challenges. There was a total of 43 household interviews taken in which 18 belonged to Tangiya Basti, 10 to Kathgaon and 15 to Matiyani Tole. A total of 13 Key Informant Interviews were done in Kolhabi, Nijgadh and Jitpur Simara. The Focus Group Discussion (FGD) was done in Matiyani tole. Secondary data was also collected through review of existing literatures, government reports, print media, newspaper articles and the internet.

3. Literature Review

Large-scale infrastructure projects play a pivotal role in a country's economic progress; nevertheless, such projects come with a non-trivial cost that impact a specific segment of the population and have profound socioeconomic implications upon the local people [7]. Local and indigenous communities face the harshest repercussions by most of the major large infrastructure projects.

3.1 Local Communities and Environment

Indigenous people and local communities are an integral stakeholder of the ecosystem, and they have continued to struggle to preserve their wellbeing and identity [8]. They differ from the dominant societies in which they reside in terms of their social, cultural, economic, and political traits, but they also face the same issues when it comes to defending their rights as

unique peoples and, consequently, the environment [9]. A rising amount of data suggests that forests and people have evolved together over thousands of years [10]. For the local communities to achieve their fundamental necessities, forest resources are essential. These include offering, supporting, and administering services related to the cultural ecosystem [11]. While the local communities also do have a part in using the forest ecosystem for their short-term benefits, they also implement sustainable strategies which help in conserving the ecosystem in long term. For example, a group living in forests on Colombia Venezuela border reserve upper watersheds due to their spiritual beliefs which is in a way similar to classified protected areas by government to conserve the area [10]. Despite their role in management of natural resources, and protecting forest ecosystems, they lack power and face challenges in participation in decision making processes about their lives and livelihoods. The indigenous and local communities have an attachment to the forest ecosystems wherein they develop sustainable practices for their daily lives. The utilization of local communities can play a key role in conserving and maintaining the sustainability of forest ecosystems.

3.2 Infrastructure Expansion and Development

Infrastructure is the foundation of any industrialized economy's foundation which is essential for daily operations and for constructing society's backbone [12]. A key requirement for the achievement of development policies has been referred to as infrastructure capital, which comprises services that involve transportation, water and wastewater treatment facilities, telecommunications, and energy generation, transmission, and distribution. Infrastructure is crucial because it can have an impact on a variety of economic activities, directly affecting both the production potential of businesses and the consumption choice of consumers. Infrastructure can facilitate productive differences above all else and encourage intraregional trade and investment, especially through trade facilitation, in addition to these microlevel effects on households [13].

Nepal as a developing country has been lagging behind in terms of infrastructure development and low GDP. The necessary infrastructure to support Nepal's rapid economic growth has not yet been fully created [14]. In the global scale when we look at Nepal, it ranks 112 among 141 countries on a scale of Global Competitiveness Index in terms of infrastructure development [15]. According to a report of [16], Nepal aimed to graduate from low-income country to a middle-income country by 2022 but most of the citizens do not have access to adequate infrastructure provisions. By closing infrastructure gaps, the development can play significant role in economic growth, employment generation, and efficient movement of goods and services [14]. There are strong evidences that suggest there are beneficial impacts of infrastructure on development such as production and productivity, reduction in poverty and inequality, labor market results, human capital accumulation, and trade [17]. A key aspect of reducing poverty is infrastructure. Both the social and economic domains are affected by it. It has been demonstrated that roads in India alone are responsible for 7% of the rise in total rural output [18].

Understanding Human-Environment Relationship of Local Communities: A Case Study of Nijgadh International Airport

- 4. Unequal distribution of economic impacts on the displaced families.
- 5. Communal resources such as grazing lands were not adequately compensated.

Tribal "adivasi" people were relocated from the hills to the plains to live among villagers who have long been exposed to the market economy and engage in livelihood practices typical of mainstream rural Indian culture rather than the adivasis domestic subsistence economy. Based on early developmental models, infrastructure project had a top-down, trickle-down, blueprint-planning approach, where subsistence and traditional sectors (i.e., production and social support) were often neglected leading to inadequate compensation, insufficient rehabilitation, and concerns about the overall well-being of the displaced populations. The policy does focus on social justice but fails to address gender equity.

which, due to lack of government's interference, they settled permanently living in huts in the area [32]. These 1476 households do not possess the land ownership of the area.

4.0.3 Matiyani Tole

Matiyani is a newly established settlement of 39 families of Dalits who have migrated from different places in 2061 BS mostly for the land availability. Most of the people in the settlement have migrated from places within the Bara district such as Sajhauri, Kohalpur, Sukhi Patra, Dumariya, Kalaiya, Gadhimai etc.

4. Case Area

Nijgadh Forest, located in northern part of Bara district in Madhesh Province is the last remaining patch of Charkose Jhadi in the Eastern Nepal. The district consists of 2 sub-metropolitans, 5 urban municipalities and 9 rural municipalities. Among these, our study area lies in Kolhabi Municipality and Jitpur Simara Sub Metropolitan. On the North of the forest lies the East-West Highway, Pasaha River on the West and Lal Bakaiya River on the East.



Figure 1: Map of Nepal showing study area



Figure 2: Study area showing the three settlements

4.0.1 Kathgaon

Kath Gaon lies under Ward no. 8 of Kolhabi Municipality. It is a settlement with 150 households. The settlement is a tribe of indigenous Tharu community who started living in the area since the period of Jung Shamsher Rana.

4.0.2 Tangiya Basti

Tangiya Basti lies under Ward no. 16 of Jitpur Simara Municipality. It is a compact settlement with 1476 households. The settlement was brought in the area under the concept of taungya that describes a type of shifting cultivation in agroforestry [31]. Tangiuya system was introduced around 1970s in Nepal among which Tangiya basti were among the first to follow this system. But the abolition of taungya in 1990s left these farmers landless, yet the government didn't take proper measures to look into the management of the settlement. After

5. Findings and Analysis

5.1 Demography

Gender and Age: In Kathgaon, 10 respondents were interviewed; 2 female and 8 males. Tangiya Basti has a total 1439 households with a population of 7047. Amongst them, 18 respondents were interviewed; 7 female and 11 males. Matiyani Tole has a total population of 532. Amongst them, 15 respondents were interviewed; 6 female and 9 males. Total 43 interviews were conducted in which 15 were female (35%) and 28 were male (65%). In all the three settlements; most of the residents interviewed were in the age group of 16-60.

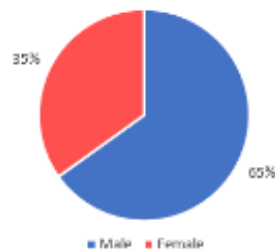


Figure 3: Gender of the respondents

More of male population was interviewed than female. In all the three settlements; more of the population lied in working population. In Tangiya, women seem more empowered and gender quality is prevalent but so was not the case in other two settlements.

Religion and Ethnicity: In Kathgaon, majority of population is Chaudhary; along with small population of Magar, Chettri, Tamang and Dalits. In Matiyani tole, majority are Dalits along with Kusuwa; Yadav and Chettri. In Tangiya, majority of population is Tamang (61%) followed by Magar, Chettri and others.

5.2 Human Environment Relationship

Dependence on Forest: All the three settlements are heavily dependent on the forest for their livelihood. Most of the people go in groups for cattle grazing to the forest; to chop firewoods and are also dependent on non-timber Forest products such as Jamun, Bel, Bayer, Neuro, Dundu Saag, Saranchi Saag, Poi Saag, Betha, Lahare, Ban-kurilo, Vyakur, Jibre Sag, Sim Sag, Titepati, Rajbriksha, Sindhure, Kukurdaino etc. (GOECE, 2018). These are an important factor in income generation for these communities. People in the settlement and around also pick mushrooms found under the Sal trees during rainy season which are sold for Rs. 500 per kilo in the nearby markets.

Human Wildlife Conflict: There are wild animals in the vicinity of the area of all the three settlements. All the three settlements when asked about wild animals pointed towards the threat of elephants and tigers in the area. One of the respondents when asked regarding the matter said,

“There are wild animals here, elephants come sometimes. This forest is their home, it is their place before us, in a way they are also gods, a form of Lord Ganesh.”

This also shows the connection farmers have with the wildlife. The priest of Katghat Shiva Mandir also showed similar belief expressing,

“Elephants come to the temple to pray to Lord Ganesha during the month of Shrawan. The even ring bells in the temple.”

Another respondent when asked regarding the matter said,

“Other animals such as deer, leopard, wild pig etc. also come to the settlement sometimes. Two people were attacked by tiger few months ago in Tangiya Basti. Elephants come here very often and destroy the crops which affects our livelihood.”

Rituals: In case of death, Tamangs bury their dead ones in sacred places in forest whereas Hindus in Tangiya Basti cremate the bodies on the banks of Bakaiya River, Kathgaon in Kath khola and Matiyani Tole in Pasaha River. Most weddings take place inside the community itself in their homes or temples. Kathgaon and Matiyani Tole also believe in forest spirits. A respondent mentioned that,

“Every year in Ashad we collect capital of 50,000-70,000 from entire village to do Asari Puja for agriculture.”

These rituals will be affected or lost with the change in dynamics of the community.

5.3 Socio-Economic Condition of the Settlement

5.3.1 Physical Infrastructure

Roads: All the major roads in all the three settlements are gravel road. There is a main road that connects from East West Highway through forest to the Tangiya Basti and Kathgaon (Ganj Bhawanipur Road). The roads get waterlogged in rainy seasons and lead to minor accidents. Many of the internal roads are not in good condition. There is a main road in Matiyani Tole around which all the houses are dispersed in, there are no internal roads in the settlement.

Transportation: For Tangiya basti, the only form of public transportation is Auto and Vans which are run by the local people from the settlement. The residents who do not own private vehicles sometimes need to wait for the auto to fill up with 5-6 people which can also lead to a waiting time of an hour. For Kathgaon; there is a bus that comes to the settlement around 9-10 am which goes to Birgunj and returns around 3-4pm. Except for that are no other public transportation available in the settlement. There is an auto driver who resides in the settlement who is called in need of any transport. There is no public transportation available from Matiyani Tole. People need to walk almost a km to Sahajnath Temple to get a bus that travels to and from Kalaiya Birgunj or autos from the area. Inadequate access to transport in Kathgaon and Matiyani has limited economic linkage of community in comparison with Tangiya Basti; depriving them of access to nearby infrastructure provisions.

Waste: In all the three settlements, most of the people compost the biodegradable waste such as fruits, vegetables waste etc. and use as manure for the agriculture. Rest of the plastic waste is burnt in most of the houses.

Water Supply: The main source of water supply is Tube well and deep boring in Tangiya Basti and tube wells in other two settlement, both being ground water sources. The deep-water boring in Tangiya has been installed by the community members themselves by collecting money in groups.

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Electricity and Communication: Most of the area in all the three settlements do not have access to network. But there is WiFi in most of the houses in the Tangiya Basti and some of the houses in Kath Gaon. Not having network is bothersome as in case of emergency, it is difficult to call hospitals, or any necessary services. Tangiya Basti has access to electricity since last Dashain, before that most of the houses had solar panels. Kathgaon has electricity while Matiyani Tole still does not have electricity. Only some of the houses in Matiyani Tole have solar panels while rest of the houses still live in darkness. Out of 15 respondents, 8 had solar panels while 7 of them still had no access to electricity. For major road, there are three solar panels in the Matiyani Tole.

5.3.2 Social Infrastructure

Schools: There are 4 schools in Tangiya Basti, 2 of them are private and 2 are public schools. Private Schools: Shikshadip Eng. B. School and Saint Paul Academy up to Class 5. Public Schools: Shree Shanti Primary School up till class 5 and Shree Nepal Rastriya Primary School up till class 8. Most of the parents are forced to send their children to Nijgadh for further education. There is 1 public school in Kathgaon: Shree Nepal Primary School up till class 5 after which kids go to nearby town such as Ramnagar, Madhuwan etc. for further education. There is 1 public school in Kathgaon: Shree Nepal Primary School established in 2009 AD up till class 5 after which kids go to nearby towns like Jaitapur, Raghunathpur, Lamidada for further education. Laxmi, a school teacher also expressed her disappointment,

"I tried to increase the class standard at least up to 8th in vain. The major issue is that the children have to cross forest and river to have access to education while being very young."

Another KII, Man Bahadur Thapa also expressed,

"The schools in the community lack proper infrastructure and are up till Class 8 only, due to which many of the children end up dropping their education. The rents in Nijgadh are high and everyday up down commute is difficult. Also, at 8th standard, children are still very young to live away from their parents which also leads them to being involved in wrong activities and not being able to concentrate much in their education. But due to poverty, many households are not able to afford education for their children."

Health Post: There is one community health post in Tangiya Basti only. The health post provides first aid services, maternity services and regular checkups. Nijgadh is the nearest city for any major health issues for Tangiya Basti. There are no health centers in Kathgaon and Matiyani Tole. They go to Madhuwan to go for health checkups. Vikram, ward member of Kolhabi 8 mentioned,

"There is no health centre in Kathgaon, people have to reach Baluwa Bazaar or Madhuwan to have access to hospitals or health centre. The lack of

health centre has led to many deaths in the settlement."

Cultural Heritage: Tangiya basti has a gumba called Shanti Buddha Bhumi Vihar and a church inside the basti. Along with that, there is an idol of shiva in the main chaur of the main school chowk. In Kathgaon, there is a Bhairav temple along the Gunj Bhawanipur Road and a very old shiva temple which was constructed by Banu Chaudary. The marriages in Kathgaon also take place in this temple. There is a shiva linga in Matiyani tole. The most important temple near all the three settlement is Sahajnath Temple (Katghat Shiva Temple). There is also a month-long fair in the month of Shrawan where devotees from all over Nepal as well as India visit the temple.

5.3.3 Economic Infrastructure

Tangiya Basti: The basti's main livelihood depends on agriculture, but there are many essential shops and markets as well inside the basti itself. They have a major dependence on the forest for cattle rearing and chopping firewoods. Some of the residents of the Tangiya basti work as auto and van drivers who commute people to and from Tangiya Basti. Women are also involved here in weaving carpets that are sold to Kathmandu.

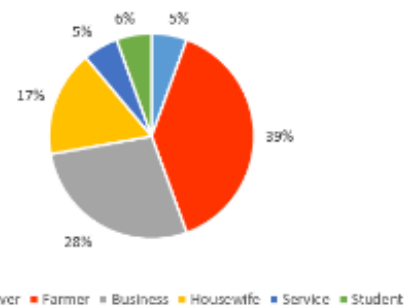


Figure 4: Occupation of respondents of Tangiya Basti

Kathgaon: Being an indigenous community, most of the people are involved in farming, cattle rearing, fishing etc. There are very few shops in the settlement so people need to commute to other areas for even basic needs, mostly Naya Basti or Madhuwan. Vikram, ward member also mentioned that,

"Some people do work in factories outside the settlement in Simara as labors, mechanics etc., and earn around 20 to 25 thousand in a month. 5% of the population is involved in foreign employment."

Out of the ten respondents, only one family had a son abroad for employment. Another respondent remarked,

"Since this is an indigenous community, people tend to go abroad very less here."

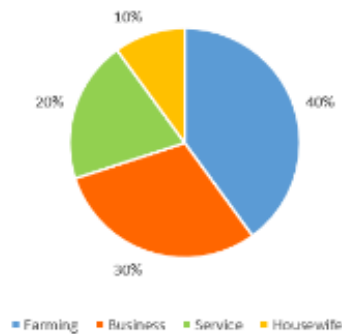


Figure 5: Occupation of respondents of Kathgaon

Matiyani Tole: Most of the people are involved in farming, there are no shops in the settlement so people need to commute to other areas such as Jaitapur, Madhuwan for even basic needs. Out of the 15 respondents, 3 families had their family members abroad for foreign employment. 4 of the respondent's families had people working outside Matiyani Tole as electrician, plumber, carpenter.



Figure 6: Occupation of respondents of Matiyani

5.3.4 Land Ownership and Transaction

Looking at the settlements; Tangiya Basti and Matiyani tole are settled on government land so they do not have land ownership certificate (lal purja) for their plot. 16 of the residents in Kathgaon are settled in Ailani Jagga while remaining households do have lal purja. Out of the 10 respondents in Kathgaon, only 1 of them did not have lal purja while 9 of the respondents had lal purja. Land transactions are prevalent in Tangiya basti, explaining regarding the matter, one of the respondents said,

"Selling or Buying land here is like buying vegetables in a market. Here, they measure the land plot and write it in a paper that this is your land and the land is transferred to another owner. Five to six other people are present there during the process as a proof of the land being sold."

5.4 Airport, Development and Local Communities

Even though the project was reinitiated in May, according to the official of Second International Project Office, the soil testing is being done again after which the decision of airport will be made. In regards to the construction of the airport itself, most of the community members agreed that the project is an important step to country's national development. They saw it as a positive development, out of 43 respondents, 4 respondents did not like the idea of the airport. There is also a visible link between hindrance in development in communities in regards to the airport project. In terms of basic provision such as road, all the three settlements have gravel or earthen road; provision of electricity was made last year in Tangiya basti while Matiyani Tole still doesn't have access to electricity. As per respondents, when the requests are made in regards to the provision of infrastructure, the project has been an excuse for holding off the development of the communities itself. One of the respondents said,

"We have been in a dilemma for far too long, maybe some people might benefit from but we would prefer if we could continue living here itself. Even the area has not been developed because of the project. Many people haven't even repaired their houses because of the dilemma."

Another respondent remarked,

"People have voiced their need of basic infrastructure such as electricity, road, etc. multiple times but due to the dilemma of the construction of airport, development has been in hold as the state is reluctant to spend money due to construction of airport."

In terms of development, Tangiya basti is more developed than other two communities because of the community's role in development as well. The community collected money in groups of 10-15 people to get the works of boring done for their households as it plays a major role in farming as well. A respondent when asked about boring said,

"We have done all the boring with our own money. In every locality, people created a group of 15-20 households and each household raised 40000 -50000 and the boring work was completed which has been important for irrigation purpose."

5.5 Resettlement of Local Communities

All the three settlements have been demanding the government to resettle them with infrastructure provisions to a new area before the construction of the airport. In terms of resettlement, since Tangiya Basti and Matiyani Tole are settlements living in government land, no decision has been made in regards to the compensation of the settlement. Meanwhile Kathgaon has already received compensation. The compensation has been distributed in following manner:

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S.No.	Land Type	Compensation (per katha)
1.	Land untouched by Road	Rs. 2,41,500
2.	Land touched by main survey road	Rs. 4,60,000
3.	Land touched by internal roads	Rs. 3,39,250

Figure 7: Compensation provided in Kathgaon

In one of the interviews with ward chairperson of Kathgaon, he expressed,

“The compensation has been received by most of the people of Kath gaon except for the landless people in the settlement. The development in Kathgaon has not been structured. Most of the people are discontent about the cash compensation given and have raised concerns that government should have resettled them to another location. But people are still living in the area in hopes of getting resettled.”

Another respondent of Kathgaon when asked about resettlement said,

“Since Kathgaon is an indigenous community, we would have preferred, if we could continue living together and resettled by government to a new area. After the land compensation have been provided, the land prices have also significantly changed due to which buying land in nearby area has been a further challenge. People also had to pay 2.5% land tax as well which further reduced the amount. Now, the tax has increased to 5%.”

People of Kathgaon have been provided with land compensation, they have bought land in different areas such as Madhuwan, Lamidada, Bardibas etc. One of the KII interviewee, Ramesh Sapkota mentioned their demands and said,

“The government should provide land compensation and proper resettlement of the community should be done. Some of our demands are: 2 bigha 5 katha land for each household; proper houses; basic infrastructure provision need to be available; availability of food and grain for 1 year until people accommodate to new employment; a person from each household should receive employment as per their skill level in the airport.”

When asked if people prefer land compensation along with proper resettlement or cash compensation only 2 respondents preferred the later one. Explaining the reason for preferring land compensation, one of the respondents explained,

“We don't know what kind of houses would they build for us. It wouldn't be house like we build for ourselves. So, I would prefer if we get compensated

so that we can construct our houses on our own, instead land compensation would be better.”

When looked into EIA report and the modalities of resettlement mentioned, it is evident that the approach is more of a top-down, trickle-down, blueprint-planning approach, where subsistence and traditional sectors are often neglected as in case of Narmada River basin which could further reduce their living standard. As per the report, at least a member of each family of community will be employed during construction process of airport. After the airport is built, the report suggests that the businesses are requested to hire the people but the report fails to address any proper employment plan for the people in long term.

6. Conclusion and Recommendations

As resettlement is a complex dynamics, so, some of the major economic and social challenges that need to be considered are:

Economic Marginalisation:

1. Moving of residents to newer urban areas with land compensation can leave them grappling with the issue of finding new source of income.
2. Lack of technical skills could also reduce the possibility of the new employment.
3. Many economic activities specific to settlement such as cattle rearing, weaving carpets might also be lost.
4. Strain existing infrastructure and services of the new area they accommodate to, leading to inadequate living conditions.
5. Inadequate compensation as in case of Kathgaon.

Social Disintegration:

1. Loss of the identity of the people as community.
2. If provided with land compensation, people will move to different areas which could lead to loss of the cultural heritage and isolation in existing rituals.
3. The inflow of displaced people into new areas can burden on the existing relationships already in place, leading to tensions and confrontations between newcomers and locals.
4. Those who have been forcibly relocated can see a decline in their social standing and be required to pursue novel and unusual means of subsistence.
5. Loss of forest and the dependence of the communities on forest ecosystem.

It is very important to consider these socio-economic factors and integrate the participation of local communities to facilitate an inclusive planning process. When discussed with the communities in terms of what can be done to improve their employment opportunities, some of the residents mentioned that trainings can be provided to men for driving, cattle rearing, etc.

and women for beauty parlor, sewing, embroidery and both for working in different factories etc. For people who are more educated, technical training could be provided.

In conclusion, the research emphasizes the complex interactions that exist between communities and their ecosystem, particularly in the context of development projects. It has never been more important to build a sustainable relationship with the landscapes and ecosystems that are essential to infrastructure and development in the face of growing demands from climate change and population growth. In summary, this research explores the complex web that communities, the environment, and development weave together. It advocates for measures that protect ecological integrity, encourage inclusive community engagement, and guarantee equitable distribution of benefits, calling for a reevaluation of development paradigms.

This research is a stepping stone for understanding the local community's perspective and existing situation on the development projects; especially for Nijgadh Airport. The research can be a useful tool to reevaluate and plan the resettlement process for the three settlements by understanding their dynamics and outlook on the project. This can also help the future researchers and development projects to have an insight for community integrated planning process while also understanding the parameters of resettlement dynamics to have more of an inclusive process.

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ANNEX VII – Plagiarism Report

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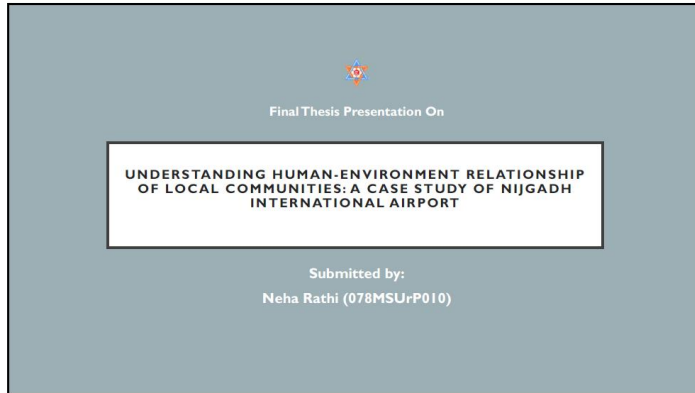
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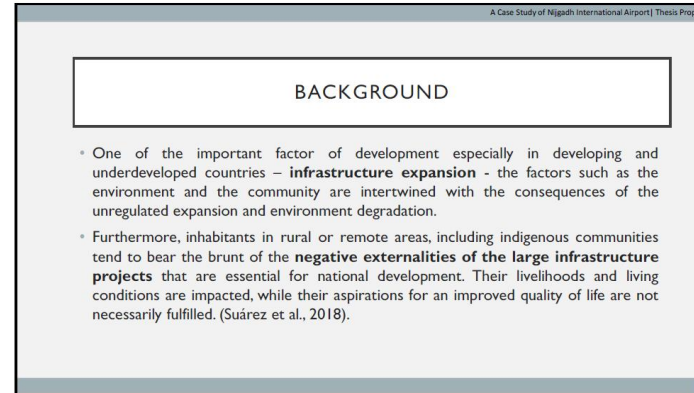
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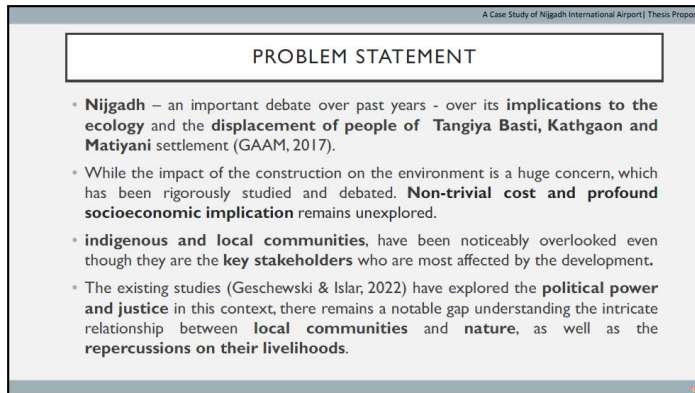
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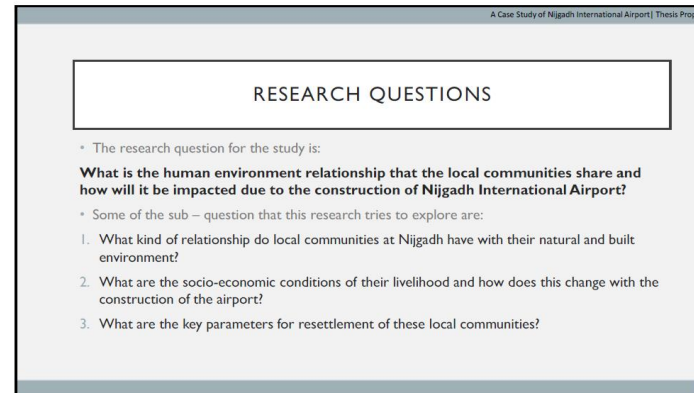
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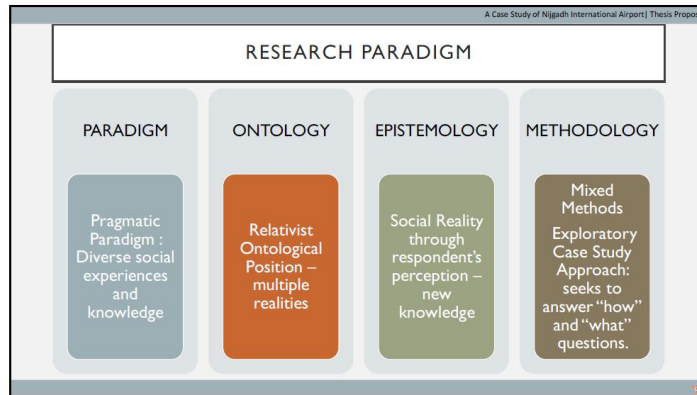
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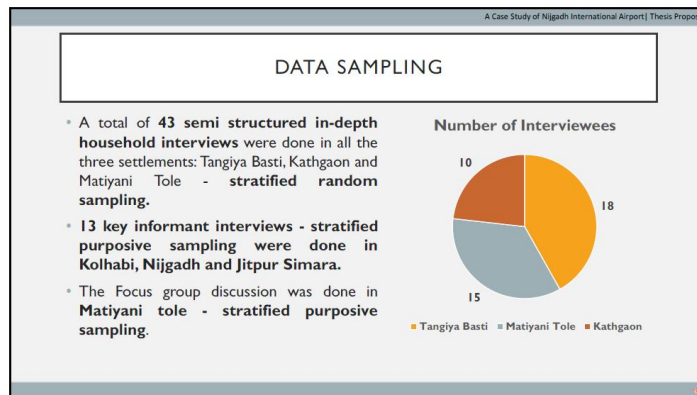
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7

LIMITATIONS

- The research focuses on the **socio-economic aspects of the local communities** and **does not adhere to any political bias or views**.
- The research **does not study if the airport itself should be built or not** instead focuses on the aspects of what is the **community's relationship with the environment; the socio economic implications on their livelihood and resettlement dynamics of these communities**.

8

LITERATURE REVIEW - INFRASTRUCTURE AND DEVELOPMENT

- Nepal as a developing country and necessary infrastructure to support economic growth has not yet been fully created (Dhungel, 2020). The government has been investing in several infrastructure projects in terms of highways, bridges, hydropower, and many other infrastructure projects but **most of the citizens do not have access to adequate infrastructure provisions** (World Bank, 2019).
- By providing environmentally friendly basic necessities and utilities and by enhancing physical connectivity both within and between countries, infrastructure also improves socioeconomic and environmental circumstances and facilitates the movement of commodities and services (Bhattacharyya, 2010).
- Many evidences also suggest that infrastructure plays a key role in the poverty reduction. It provides employment opportunities, better access to services and reduces income inequality (Fardoust, et al., 2010).

9

INFRASTRUCTURE EXPANSION AND LOCAL COMMUNITIES

- Local and indigenous **communities identity is linked to their ecosystem** which is often disregarded in large-scale infrastructure projects. Understanding their perspectives and for such developments is crucial, as these projects can significantly impact their environmental, cultural, social, and economic well-being (Mahmood et al., 2020).
- **Chincero Airport of Peru** wherein airport was proposed in an indigenous town. The communities had a cultural continuity in practices such as weaving, the language, the social organization, reciprocity mechanisms, traditional medicine, etc., which stood as **their identity which was lost along the lands of these indigenous community**.
- Two of the communities never received compensation for their land nor were these communities involved in the decision-making process (Garcia, 2014) .

10

POLICY REVIEW

• There are different laws and acts prevalent in context of land acquisition, compensation and resettlement in Nepal, few of them are:

<p style="text-align: center;">Land Acquisition Act 1977</p> <ul style="list-style-type: none"> • facilitates laws related to land acquisition for government-initiated development projects by compensating landowners, with compensation generally provided in cash at current market value or, if government land is available, as land for land. 	<p style="text-align: center;">Land Acquisition, Rehabilitation and Resettlement Policy (LARRP) 2015</p> <ul style="list-style-type: none"> • This policy enables land acquisition for infrastructure projects with compensation expenses incorporated into the project cost. It stresses inclusive programs for socio-economic development, subsidized rates, additional assistance, and employment opportunities for project-affected individuals.
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<p style="text-align: center;">Gender Equality and Social Inclusion Policy (GESI) 2021</p> <ul style="list-style-type: none"> • addresses gender equality and social inclusion in terms of participation. 	<p style="text-align: center;">Housing Act 2018</p> <ul style="list-style-type: none"> • Aims to make proper arrangement for a safer housing facility to homeless Nepali citizens to improvise problem of homelessness. 	<p style="text-align: center;">The Constitution of Nepal, 2015</p> <ul style="list-style-type: none"> • Article 25 grants citizens the right to property, with restrictions only for public interest; if the state acquires private property, compensation is mandated, subject to specified laws (Article 25(3)).
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12

A Case Study of Nijgadh International Airport | Thesis Proposal

NARMADA RIVER BASIN – SARDAR SAROVAR PROJECT

- The Narmada River is India's fifth-longest river which drains in three states of India namely, Madhya Pradesh, Gujarat, and Maharashtra. The Sardar Sarovar Project was an inter-state project to provide irrigation, drinking water, and hydroelectric power to these states which entailed building a dam, canals, and reservoirs on this river basin. **22,000 families from 245 villages** were displaced as a result of the project.
- The resettlement policy proposed to provide each displaced family with **five acres of land, a housing site with temporary accommodation, a resettlement grant**. Each family, including landless laborers, is entitled to **2 hectares of irrigable land. Sons above 18 years qualify as separate families**, along with compensation for the transport of dismantled components to the new habitat.
- Environmental issues were not addressed adequately. The changes to the river's flow and the ecosystem disruptions affected local fish populations, which in turn impacted the livelihoods of fishing communities.

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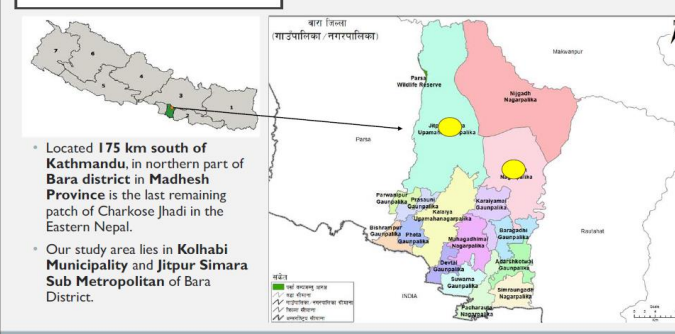
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<h4 style="text-align: center;">GOOD ASPECTS OF GUJARAT R&R POLICY</h4> <ul style="list-style-type: none"> • Strong political commitment and capacity – effective implementation. • Comprehensive Impact Assessment of the population affected by project. • Preference to resettlement and choice of site selection to the displaced population. • Opportunity to landless farmers by providing 2 hectare land. • Developing site infrastructure and amenities to help incentives to move. 	<h4 style="text-align: center;">DRAWBACKS OF GUJARAT R&R POLICY</h4> <ul style="list-style-type: none"> • Compensation and rehabilitation feel short of needs of displaced population. • Lack of transparency in the resettlement process. • Gender biasness, for example for agricultural land sons above 18 were considered separate family but daughters were excluded. • The policy lacked cleared framework for implementation process. • Inadequate grazing land. • Breakdown of traditional social structure and loss of connection to the forest.
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STUDY AREA




- Located 175 km south of Kathmandu, in northern part of Bara district in Madhesh Province is the last remaining patch of Charkose Jhadi in the Eastern Nepal.
- Our study area lies in Kolhabi Municipality and Jitpur Simara Sub Metropolitan of Bara District.

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Three settlements: Kathgaon, Tangiya Basti and Matiyani Tole.




Source: Google Earth

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KATH GAON



MATIYANI TOLE




- Lies in Ward no. 8 of Kolhabi Municipality, home to **indigenous Tharu community** - settlement with 150 households.
- During the reign of Jung Bahadur Rana, around 1800s they started residing there after fleeing Kathmandu. They constructed the Katghat Shiva temple, near which there was an old house, where they stayed hidden.

- Lies in **Ward no. 17 of Jitpur Simara Sub Metropolitan** – a newly established settlement of **39 families of Dalits** who have migrated from different places in **2061 BS** mostly for the land availability.
- Most of the people in the settlement have migrated from nearby places within the Bara district such as Sajhauri, Kohalpur, Sukhi Patra, Dumariya, Kalaiya, Gadhimai etc.

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TANGIYA BASTI

- Lies in **Ward no. 16 of Jitpur Simara Sub Metropolitan**.
- A compact settlement with **1476 households**.
- Tanguya** - A type of shifting cultivation in agroforestry (Bhusal, 2010) which was introduced around 1970s in Nepal. The settlement was initially resettled - during **2032 BS** for **plantation program** under the governance of His Majesty Mahendra Bir Bikram Shah Dev.
- Grow species of trees such as **Sisau, Teak, Masala** etc., and look after them. Once the trees were big enough, they shifted to another place within the forest itself for plantation. That is how the settlement ended up in the current area.
- Abolition of the system in 1990s but due to lack of management of the basti, people settled here.
- None of the household possess the land ownership of the area.



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TANGIYA BASTI

2008




2020




Source: Google Earth

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Sectors	Tangiya Basti	Kath Gaon	Matiyani Tole	Remarks
Roads	Gravel Roads in major and internal roads	Gravel road in major road, lack of proper internal roads	Gravel Road in major road	The inadequate roads and poor road access limit the uses of local markets to the sales of their products, can lead to accidents. Improved roads can reduce household expenditure;
Transport	Autos; Vans and Private	Private only and Bus	Private only	Only 1 bus in Kathgaon and no public transport in Matiyani. Inadequate access to transport can deprive of access to nearby infrastructure provisions;
Water Supply	Boring and Tube wells	Tube wells	Tube wells	Dependence on underground water (reliance on ecosystem); declining rate of ground water.

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Sectors	Tangiya Basti	Kath Gaon	Matiyani Tole	Remarks
Solid Waste Management	Compost food waste into fertilizer and burn plastic waste	Compost food waste into fertilizer and burn plastic waste	Compost food waste into fertilizer and burn plastic waste	Sustainable management of organic waste; Burning of plastics can cause air pollution; environmental degradation
Liquid Waste Management	Throw waste water in the fields	Throw waste water in the fields	Throw waste water in the fields	Seepage of waste water to underground deteriorating the quality of water; river pollution
Electricity	Electricity and Solar panels	Electricity	Solar panels in minimal houses	No electricity in Matiyani tole yet. Solar panels is a sustainable way but provision should be made.
Communication	No network	No network	No network	Barrier in access to infrastructure provisions such as ambulances, hospitals & emergency response
Cooking	Gas and Daura	Gas and Daura	Daura	Use of woods contributes to air pollution and deforestation;

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HOUSING STRUCTURE

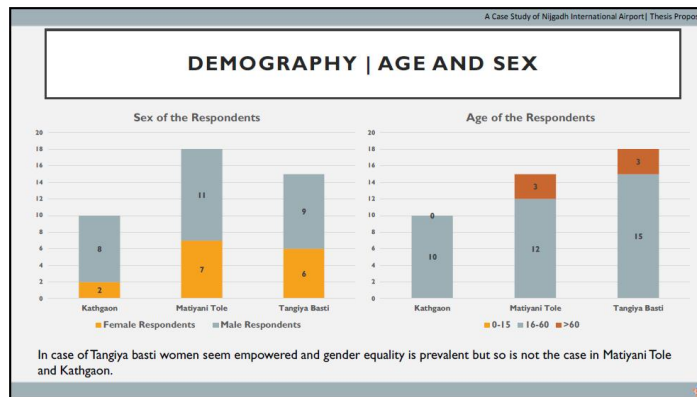
- There are different type of housing structures in settlements. Many houses have used woods/planks to construct their houses.
- Tangiya Basti** : traditional Tamang houses, along with many stone in cement mortar houses.
- Matiyani tole** : All the houses are stone in mud mortar with thatched roof.
- Kathgaon** : Most of the houses are stone in mud mortar as well with use of woods in pillars and roof
- Use of local natural resources such as wood for most houses in all three settlements. In terms of embodied energy, if local natural resources are used in the houses, it reduces the energy emission as well carbon footprint which is beneficial for environment.

Wood and Plank used in houses

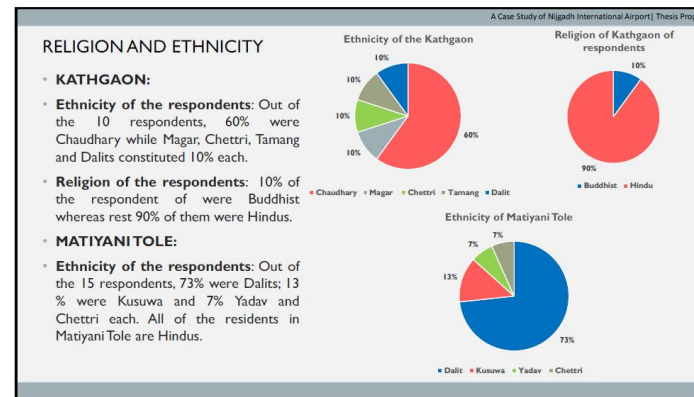
Tamang house

Mud houses with thatched roof

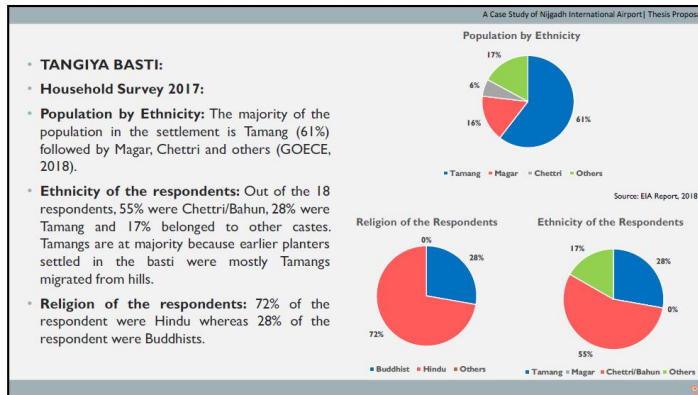
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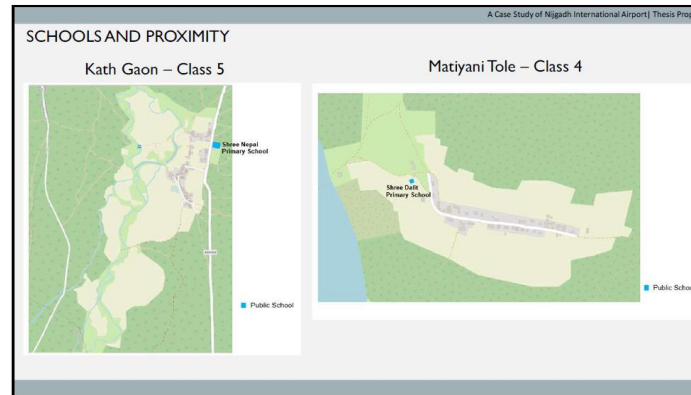
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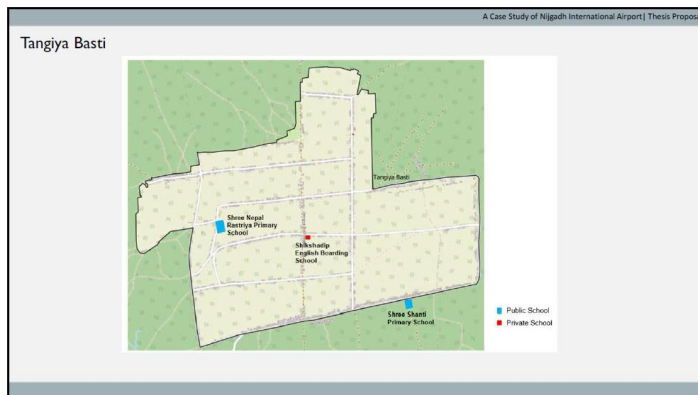
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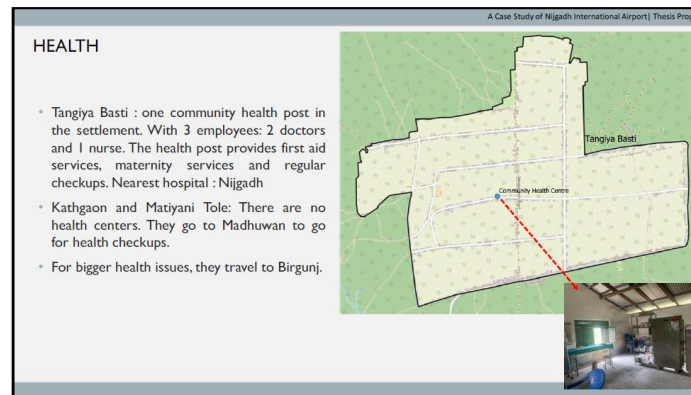
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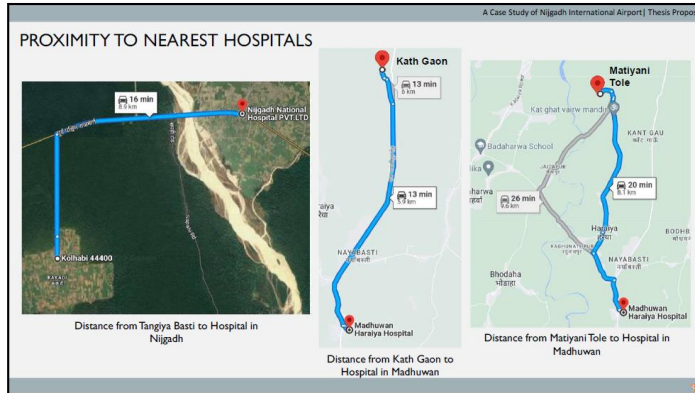
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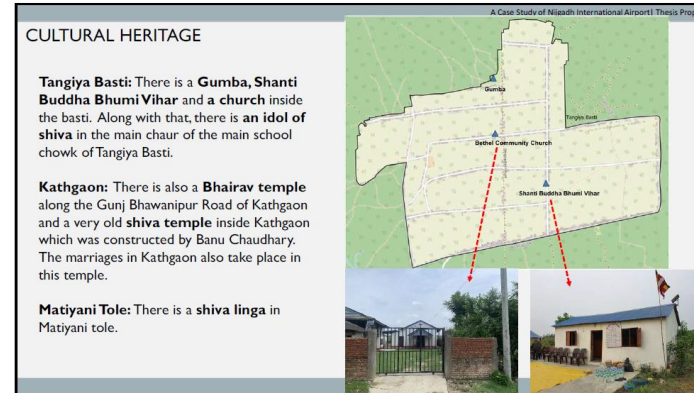
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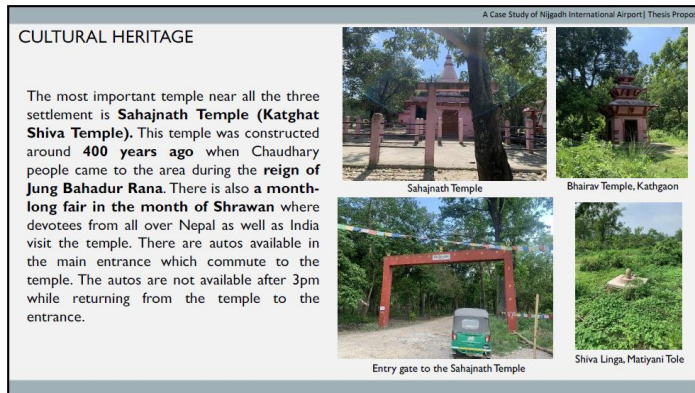
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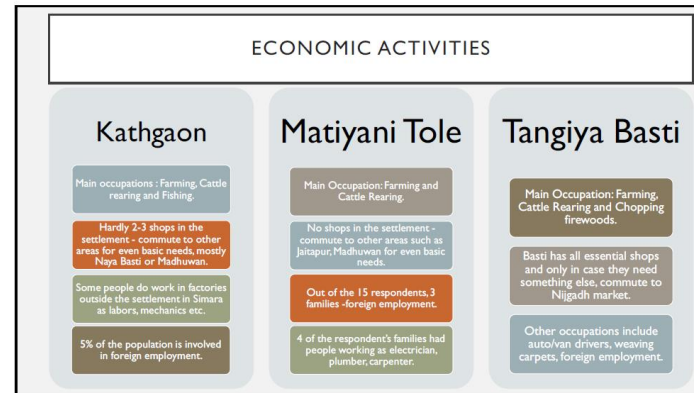
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LAND OWNERSHIP AND TRANSACTIONS

- Looking at the settlements; **Tangiya Basti and Matiyani tole** are settled on government land so they **do not have lal purja for their plot.** 16 of the residents in **Kathgaon** have settled in **Ailani Jagga** while remaining households do have lal purja. Out of the 10 respondents in Kathgaon, only 1 of them did not have lal purja while 9 of the respondents had lal purja. For Tangiya basti and Matiyani Tole, none of the respondents had Lal purja.
- Land transactions are prevalent in Tangiya basti, explaining regarding the matter, Hajarilal, shop owner explained, "Selling or Buying land here is like buying vegetables in a market. Here, they measure the land plot and write it in a paper that this is your land and the land is transferred to another owner. Five to six other people are present there during the process as a proof of the land being sold."


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HUMAN-ENVIRONMENT RELATIONSHIP

I. COMMUNITY RITUALS

In case of death, Tamangs bury their dead ones in sacred places in forest whereas Hindus in Tangiya Basti burn the bodies in Bakaiya River, Kathgaon in Kath khola and Matiyani Tole in Pasaha River. Any weddings take place inside the community itself in their homes.



Kathgaon and Matiyani Tole also believe in forest spirits (ban devta). Vikram, ward member of Ward 8, Kolhabi also mentioned that every year in Ashad, capital of 50,000-70,000 is collected from entire village to do Asari Puja for agriculture.

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II. HUMAN WILDLIFE CONFLICT

- Threat of elephants and tigers** in the area - frequent occurrence of elephants in the area who destroy all the crops as well there is threat of human life as well from tigers as per the respondents.
- One of the farmers mentioned that forest is these animal's home, it is their place before us, in a way they are also gods (talking about **elephants**) - **a form of Lord Ganesh**. The priest of Katghat Shiva Mandir also showed similar belief expressing that **elephants come to the temple to pray to Lord Ganesh during the month of Shrawan**.
- Another respondent mentioned that **other animals such as deer, leopard, wild pig etc.** also come to the settlement sometimes. In Tangiya basti, two people were attacked by tiger few months ago and there has been death as well. But, no deaths due to human wildlife conflict in other two settlements.


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III. CATTLE GRAZING



IV. CHOPPING FIREWOODS



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V. PICKING MUSHROOMS

The wild mushrooms are found **under the Sal trees** which are picked by the members of the settlement and surrounding areas. They grow during rainy season. The residents also sell these mushrooms for Rs. 500 per kilo in the nearby markets.

VI. NON TIMBER FOREST PRODUCTS

Non-Timber Products can be obtained from trees, herbs or shrubs and are an important element of forest which are also used by the local and indigenous communities. They could also be an important factor in income generation for these communities. Due to infrastructure projects, the collection of these forest product such as firewood, indigenous medicinal herbs, seasonal wild vegetables and fruits from the forest area will not be possible affecting their way of life. Some of the NTFP used by the local communities in the area are: Jamun, Bel, Bayer, Neuro, Dundu Saag, Saranchi Saag, Poi Saag, Betha, Lahare, Ban-kurilo, Vyakur, Jibre Sag, Sim Sag, Titepati, Rajbriksha, Sindhure, Kukurdaino etc.

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Human-Environment Relationship

- Major economic activities – dependence on forest
- Community Rituals associated with nearby forest and rivers
- Non – Timber forest products for consumption and income generation
- Cattle Grazing and Chopping of firewoods from forest.
- Human Wildlife conflict
- Construction of many houses using woods and forest materials

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Visible link between hindrance in development in communities in regards to the airport project.

<p>Matiyani Tole still doesn't have access to electricity and provision of electricity was made last year in Tangiya basti.</p>	<p>As per respondents when the requests are made in regards to the provision of infrastructure, the project has been an excuse for holding off the development of the communities itself.</p>	<p>Another respondent mentioned "due to the dilemma of the construction of airport, development has been in hold as the state is reluctant to spend money due to construction of airport."</p>
<p>No network within all three settlements.</p>		
<p>Tangiya basti being more developed than other two communities is also due to community's role in development.</p>	<p>For boring work done in Tangiya Basti, the community collected money themselves in groups of 10-15 people as it was important for farming. Matiyani still has tubewells due to which irrigation is difficult.</p>	

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Resettlement of communities

<p>Tangiya Basti and Matiyani Tole are settlements living in government land, no decision has been made in regards to the compensation of the settlement. Meanwhile Kathgaon has already received compensation.</p>	<p>People of Kathgaon have been provided with land compensation, they have bought land in different areas such as Madhuwan, Lamidada, Bardibas etc.</p>
<p>Ward chairperson of Kathgaon also expressed people are discontent about the cash compensation given and have raised concerns that government should have resettled them to another location.</p>	<p>Land Tax of 2.5% further reduced the amount which has now increased to 5%.</p>
<p>Their demands: Proper resettlement of the community; 2 bigha 5 katha land for each household; proper houses; basic infrastructure provision; food and grain for 1 year; a person from each household should receive employment in the airport."</p>	<p>Land prices have also significantly changed as many people bought land around the project area.</p>

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Review of EIA report

There are six modalities that have been considered for the compensation as per EIA Report (GOECE, 2018)

Wherein people preferred modality 4: Resettlement in Janata Awas Karyakram, they were shown 6 government lands and preferred Jadhuti, 700 bigha of land owned by Herbs Production and Processing Co. Ltd. Of Nepal.

A top-down, trickle-down, blueprint-planning approach, where subsistence and traditional sectors (i.e., production and social support) are neglected.

The report fails to address any employment plan for the people in long term which could push them to further poverty and lower their way of life.

The EIA for the project discusses some of the issues pertaining to physical and economic impacts. However, no specific Resettlement Action Plan has been prepared as of yet.

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KEY ISSUES DUE TO DISPLACEMENT

ECONOMIC MARGINALISATION

- Land Compensation – Strain existing infrastructure and services of the new area they accommodate to, leading to inadequate living conditions.
- Since most of the community is involved in agriculture leaving residents grappling with the issue of finding new source of income.
- Lack of skills could also reduce the possibility of the new employment.
- Many economic activities specific to settlement such as cattle rearing, weaving carpets might also be lost.
- Inadequate compensation which can already be seen in the case of Kathgaon where many people are unhappy with the compensation.

SOCIAL DISINTEGRATION

- Loss of the identity of the people as community.
- Loss of the cultural heritage and isolation in existing rituals.
- The inflow of displaced people into new areas can lead to tensions and confrontations between newcomers and locals.
- Psychological issues because the settlement have been living in the area for a long period of time.
- Decline in their social standing and be required to pursue novel and unusual means of subsistence.

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RECOMMENDATIONS

- **Involuntary resettlement** should be **avoided**, if not, minimise the environmental and socio-economic costs in planning process.
- An inclination towards **resettlement rather than land compensation** - integral to conserve their identity, practices and way of life.
- Compensation in cash leads to **community diverging to live in different places** losing their identity and have a harder time adjusting to the new environment disrupting their way of life and traditions.
- While studying the resettlement sites of Narmada Valley Project in Gujarat, many of residents, if not all, showed a strong sense of **preference for community-based resettlement** (Garikipati, 2002). In case of these communities as well, people showed preference to be resettled with their community preferring the community-based living. Especially in case of indigenous community and Dalits, there is **interdependency on their community for living**. This further asserts that resettlement should be given more preference than compensation for land.

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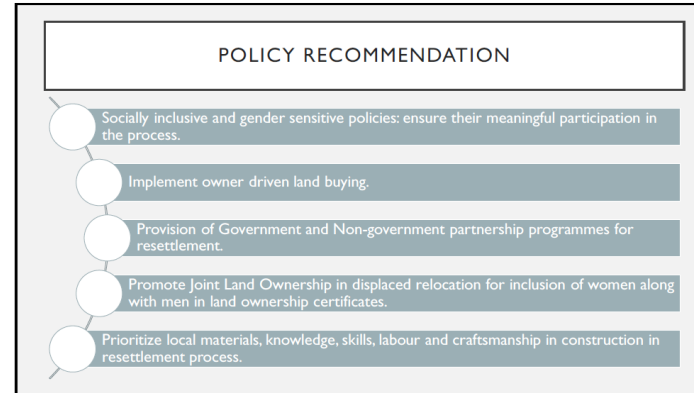
LAWS AND ACTS REGARDING RESETTLEMENT IN NEPAL

- Some of the gaps identified in the laws and acts are mentioned below:
 1. **Detailed plans and policies on involuntary resettlement** for vulnerable communities are yet to be developed in Nepal.
 2. **Resettlement and rehabilitation benefits** is not specified clearly; more attention is given to compensation value.
 3. More attention given to the process of relocating but careful consideration is also necessary for the **transition period** for them to settle to their new lives. Laws and act in Nepal do not have policies and activities to sustain their needs in transition period which should be included and prioritized.
 4. Environmental and Social Management Framework does mention of **Resettlement Action Plan** but laws do not clearly specify it. This is very integral and policies should make resettlement plan in case of infrastructure projects compulsory as this includes social assessment to measure impact on vulnerable groups and their needs.

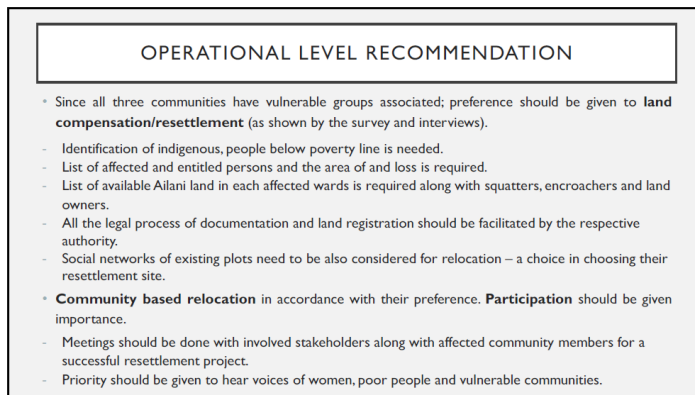
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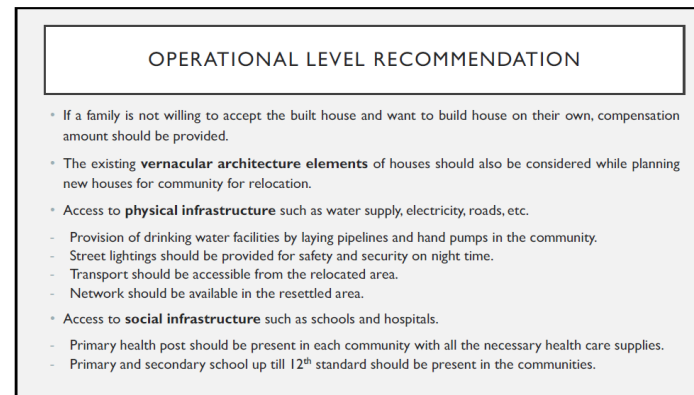
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OPERATIONAL LEVEL RECOMMENDATION

- Religious places such as temples, church, gumba etc. should be present in accordance with the beliefs of the community.
- Grants to restore temples, churches, Ghats, etc. as per consultation with the affected communities.
- Measures to assist impacted communities to **re-establish or re-develop lost community resources.**
- Some social gathering space should be present where people can sit and gather after their work.
- Jobs should be reserved for the displaced community people and their family members in the development project.
- **Trainings** to the people with no skills and animal herders should be provided to work as labor or construction worker in the project. Trainings can be provided in driving, mason, computer training, tailor, beauty parlors etc.
- Use the opportunities of existing skills like carpet weaving to **generate employment opportunities** and income.
- Provision should be made for **food and grains up to a time period** until the people can resettle to their new livelihood.
- **Employment opportunities for women to make them self-independent.**

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THANK YOU.

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