

Dilemmas of Development: A Case Study of Tiger Reserve in Goa

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, “Dilemmas of Development: A Case Study of Tiger Reserve in Goa” is based on the results of investigations carried out by me in the M.A. in Political Science at the D.D. Kosambi School of Social Science and Behavioral Studies, Goa University under the Supervision of Dr. Alaknanda Shringare and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not being responsible for the correctness of observations / experimental or other findings given the dissertation.

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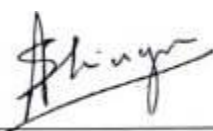
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This is to certify that the dissertation report “**Dilemmas of Development: A Case Study of Tiger Reserve in Goa**” is a bonafide work carried out by **Ms. Vrunda Vishwas Kandolkar** under my supervision in partial fulfilment of the requirements for the award of the degree of in the **Master of Arts** in Political Science Discipline at the D.D. Kosambi School of Social Science and Behavioral Studies, Goa University, Goa.



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PREFACE

As the resident of Goa I stay in semi urban area where no forest or mountain or wildlife been present. So, I need to study apart from my comfort zone into deep forest areas. As I do love environment, greenery, mountains it was best opportunity to me to visit such areas where I could conduct my research and understand the living styles, ideas of peoples residing there.

I believe that tigers are strength and pride of the nation which needs to protect from dangerous and greedy human nature. The case study of Tiger reserve in Goa was very sensitive as emotions of villagers involved along with government involvement. As a political science student it was my duty to understand the case ongoing among Goa government and Environmentalists.

My decision on taking topic on " Dilemmas of Development: A Case Study of Tiger Reserve in Goa " is succeed by conducting field surveys and interaction with people of Sattari taluka of Mhadei Wildlife Sanctuary.

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ABBREVAITION USED

Entity	Abbreviation
World Wildlife Fund	WWF
Global Tiger Initiatives	GTI
Global Tiger Recovery Program	GTRP
Convention On International Trade in Endangered Species of Wild Fauna and Flora	CITES
United Nations Development Programme	UNDP
Non-Government Organization	NGO
Sahyadri Ecologically Sensitive Area	SESA
Ministry Of Environment and Forest	MOEF
Wildlife Institute of India	WII
National Tiger Conservation Authority	NTCA
Gross Domestic Product	GDP
International Union for Conservation of Nature	IUCN
United Nation Environment Programme	UNEP
Measuring Eco Innovation	MEI
Convention On Majority Species of Wild Animals	CMS
Convention On Biological Diversity	CBD
Sustainable Development Goals	SDG
Environmental Information, Awareness, Capacity Building and Livelihood Programme	EIACP
Environmental Information System	ENVIS
National Wastelands Development Board	NWDB
Forest Conservation Act	FCA
Compensatory Afforestation Management and Planning Authority	CAMPA
Jammu And Kashmir	J&K
Indian Institute of Forest Management	IIFM

Western Ghats Task Force	WGTF
Climate Change	CC
Western Ghats Ecology Authority	WGEA
Western Ghats Special Ecology Task Force	WGSETF
Western Ghats Ecology Expert Panel	WGEEP
High Level Working Group	HLWG
Global Positioning System	GPS
Public Interest Litigation	PIL
Tata Housing Development Company	THDC
National Highways	NH
Goa Mining People's Front	GMPPF
Monitoring System for Tigers Intensive Protection and Ecological Status	M-STRIPES
Bhartiya Janta Party	BJP
Member of Legislative Assembly	MLA
Bharat Sanchar Nigam Limited	BLSN
Subscriber Identity Module	SIM

Chapter – I

INTRODUCTION

1.1 Background

Goa is the smallest state in southwestern India with coastlines of the Arabian Sea and Western Ghats. Goa is a state which is gifted with incredible natural beauty from beaches to rolling hill to a vegetation and animals life. The entire Western Ghats that stretch lying on the eastern side of Goa is accorded legal protection.

The continued mountains of Goa in the west are known as ‘Western Ghats’, which are one of the richest reservoirs of biodiversity in the world. Western Ghats covers over 0.14 million sq.km.(J.C. Almeida, 2013) in states of Maharashtra, Karnataka, Kerala, and Tamil Nadu which cover over 35 million people. Above five million ST and SC¹ who not only live but survive depend on the natural resources of this area. It is also culturally bound. The Western Ghats are divided into Northern Western Ghats, Central Western Ghats, Nilgiris, and Southern Western Ghats. The portion of Western Ghats is called ‘SAHYADRI’, the Central Western Ghats connecting neighboring states of Maharashtra in the north and Karnataka in the south. Western Ghats lying in Goa covers about 600 sq. km. out of state total area of 3701 sq.km.(J.C. Almeida, 2013).

Forest serving Sanctuaries to wild animal habitats. Features of the mountains of Goa covered with forests have helped soil conservation and sources of water to Rivers in Goa. Mandovi and Zuari rivers starting outside of Goa enter through the Ghats which Goans depend on for their

¹ SC and ST stand for Schedule Caste and Schedule Tribe respectively.

daily livelihood. Dhusagor is the highest waterfall situated in the Salaulim village of Sanguem. It starts in Karnataka state and proceeds to Kandepar River. The Arvalem waterfall in Sanquelim, of Bicholim, is a small waterfall that falls into the Saleri River.

A political integration of Goa came with a development process. In the year 1960, the population of Goa was 590 thousand, which increased to 1.17 million and 1.46 million, in 1991 and 2011, respectively. (J.C. Almeida, 2013). The climate of Goa is warm and humid. Monsoon from June to September, with annual precipitation in forest areas make wild range of vegetation growth. The changes in temperature and rainfall in Goa lead due to forest destruction. It is necessary to protect some of the natural beauty from rush of modern development.

Living organisms existed before human civilization came to exist. Living organisms is as important as human to function in the environmental cycle. Socially or naturally all resources and living organisms correlated with each other. For long term conservation of forest and wildlife legal implementation by government, authority is considered such as the Indian Forest Act and Wildlife Protection Act, National Parks, Wildlife Sanctuary, Game Reserve, Closed Areas, Reserved Forest, Protected Areas, etc., as the human activities bring destruction to biodiversity by clearing and burning trees. In India, the decline of territories occupied by tigers is 93,600 sq. km. in 2006 to 72,800 sq.km. in 2013. (Kazi Nazimuddin M., 2013). As growing population of tigers lead to need for expand forest land which is further diminishing. Project Tiger with save tiger idea, is one the largest conservation schemes in the world to safeguard tigers and national heritage.

Tigers are the main protectors of forests and ecology. A need to protect the tiger for a better environment and natural resources. Tigers are found in a diverse range of habitats, from tropical

rainforests to savannas, according to the WWF (World Wildlife Fund). Tigers other habitats include evergreen forests, temperature forests, grasslands, and mangrove swamps. These big cats span from southeast Asia in India, Nepal, and Bhutan up to the northeastern regions of the continent to China and Russia. Due to illegal poaching, the lives of Tigers are in danger.

It seems to be that Project Tiger in India in 1973 recorded in the census conducted in 1972, as 1827 tigers reduced to 1411 (year 2006) tigers in 28 tiger reserves (C.R. Bijoy, 2011). International Tiger Day, observed on July 29 each year, serves as a platform to raise awareness about the endangered tiger species. The Global Tiger Initiative (GTI), launched in 2008, fosters collaboration among governments, NGOs, and international organizations to support tiger conservation efforts. The St. Petersburg Tiger Summit in 2010 brought together world leaders to endorse the Global Tiger Recovery Program (GTRP), which aimed to double tiger populations by 2022.

International agreements and policies play a crucial role in tiger conservation. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates the trade of tiger parts and products, aiming to eliminate illegal wildlife trade and ensure the legal and sustainable sourcing of tiger specimens. The United Nations Development Programme (UNDP) supports countries in implementing sustainable development practices that align with tiger conservation goals, recognizing the interconnects between poverty alleviation, environmental sustainability, and Wildlife Conservation.

In 2001, a Confederation of Environmental NGOs from Goa, Karnataka, and Maharashtra proposed the creation of a new protected area, the Sahyadri Ecologically Sensitive Area (SESA), to be notified by the Ministry of Environment and Forests under the provisions of the

Environment Protection Act, of 1986. The Forest Conservation Act, 1980 helped to decrease deforestation.

The 25,551 sq. km. of tiger forests in 2007 rapidly expanded by 22 percent to 32,878 sq. km of core area in just three years. As the number of tiger reserve increased from 28 to 39 and spread over 17 states. (C.R.Bijoy, 2011). It is also seen that in Rajasthan 13 hotels were located within 500 meters in Ranthambore tiger reserve. Similarly, Sariska had five such hotels operating illegally. In Uttaranchal the construction of resorts and residence buildings in Corbett tiger reserve. (C.R.Bijoy, 2011). Not to be refused that's various serious factors threaten the survival of the big cats in the forested areas of Goa, as from 2009 to 2019 five tigers were killed by locals because of the increasing human -wildlife conflicts. The recently released National Tiger Census for 2022 confirmed the presence of tigers in Goa. However, it must be noted that the measures taken for the conservation of tigers by the forest department of Karnataka have helped the tiger numbers to increase in the forests adjoining Goa.

There are 3682 tigers (July 2023) up from 2967 in 2018. Rise of 24 percent in four years. They also grown up from 3167 (count by 2022 census) tigers announced by PM Narendra Modi in Mysuru on April 9, 2023 at the program inaugurated an International Big Cat Alliance conference for 50 years of Project Tiger. (The Hindu, 17 April 2023; The Times of India, 30 July 2023). The growth of 2226 tigers in 2014 up from 1706 in 2010. (The Hindu, 30 July 2023). Tigers population increased in Madhya Pradesh, Uttarakhand, and Maharashtra whereas, declined in western Ghats, Goa, Mizoram, Nagaland, Jharkhand, Chhattisgarh, and Arunachal Pradesh. Nearly a quarter of the tigers were reported outside the protected areas. (The Hindu, 30 July 2023).

All humans are living for oneself or the nation as no one thinks about nature and the future consequences if natural resources or wildlife chains which are destroyed. The debate on the conflict between development and the environment always rising and needs major discussion. Modern development as industrialization main cause of environmental change. It is stated that forest dwellers are most important in society for the conservation of forests.

The term sustainable development covers three concerns for human welfare, economic, social, and environmental which are linked together. There are challenges to having sustainable development in such a populated country. Human development has disturbed ecological balance. Reduction in the usage of carbon emissions and protection for wildlife leads to a protected environment and wildlife for the future.

1.2 Conceptual Framework

"Forest is the subject of a great deal of myth, legend and lore. Goa was blessed with a large area of 105,294 Ha (hectare) under forests, as per the survey records in 1960. They represented 29 percent of the total geographical area of Goa. On 23rd March 1995, it was conveyed to Goa Legislative Assembly that the total area covered under the forests of Goa as on 31st December 1994 was 142938 Ha of which 20000 Ha were private forests. In 1997, the Legislative Assembly was informed that the total area under the forests, in the State, was 1,22,260 Ha, representing about 34 percent of the total geographical area of the State. The Economic Survey of Goa 2009-10 now indicates that the area of Goa under the forest cover is 122,431 Ha, representing about 34 percent of the reassessed geographical area of Goa." (J.C. Almeida, 2013).

Twenty-seven crore tribal population and forest dwellers depend on forest for their livelihood in India. (Devidas Kotkar & A.B. Shanbhag ,2009). The forest is included in the Concurrent List, where in the state and central government has power to legislate and share joint responsibility to

protect, improve and safeguard forest and wildlife and dependent communities. The community plays vital role in participation in conservation of wildlife. Nature worship has been a key force in determining human attitudes towards conservation and sustainable utilization of biodiversity.

1.2.1 Forest

Sahyadris can boast of densely covered with magnificent semi-evergreen, mixed deciduous and deciduous forest types, with high raising mountains. Under the Portuguese Administration, it was said that there was strict control over the forests as no cutting trees and other activities were allowed into the forest. The involvement of the Indian Administration in illegal activities such as cutting trees for self-interests, trade, and in the name of development reduced the forest after 1947. Activities as mining were done using the open cast method, where trees standing over mining areas were just chopped off by the Portuguese Administration. It was also seen that the Portuguese Administration notified where such forest is located, a law known as Regulamento de Adminstracao das Matas de Goa under Goa forest was classified into three categories:

Class A forests covered all evergreen and semi-evergreen areas of forests, conservation of which was essential from the point of view of climate, regulation of water resources, and conservation of soil in the hilly regions. They were mainly in talukas of Bicholim, Sanguem, and Canacona.

The Class B forests covered all the non-teak moist deciduous forests that had commercial potential and were exploited by the State. The State used it selectively and ensured its regeneration. They were located mainly in Sanguem, Satari, and Canacona.

Class C forests covered all the moist deciduous forests which were secondary and which were meant to meet the needs of the people, such as firewood, grazing grounds, selective kumari cultivation, use of the branches and leaves for the preparation of manure, construction, and

repairs of bunds, etc. The general public was not allowed to enter the forests belonging to the government. Except in class C forests and especially in places such as Sanguem, Satari, and Canacona, local people were allowed to enjoy certain privileges.

After the Indian Forest Act, 1927 was extended to Goa. In 1965, many areas of forests were declared as reserved areas. Later, The Forest Conservation Act of 1980 brought in force for better management of forests. Then Goa, Daman and Diu Preservation of Tree Act, 1984, to regulate felling of trees in the private land. Forest Development Corporation, 1997, started with the transfer of government forest land to cashew and rubber plantation which gave a remarkable boom in revenue. However, locals were criticized as the government forest department joined with private companies as partners.

The National Forest Commission (2007- 08) recommended that forests should be classified on the basis of their status as pristine, climax, managed and degraded forests. The Commission argued in favor of each state government should have its own forest policy statement. There should be a mechanism to implement the forest policy by Ministry of Environment and Forests (MoEF) and at state level, with considering the forest communities and their intellectual property rights in this regard needs to be safeguarded. (Devidas Kotkar, A. B. Shanbhag; 2009).

1.2.2 Wildlife –Tigers

Tigers occupy an important place in the Indian culture. For ages, it has been a symbol of magnificence, power, and beauty and has been associated with bravery. The tiger also has a significant place in Hindu mythology as the vehicle of Goddess Durga.

By preying on herbivores, tigers help to keep the balance between the prey animals and the forest vegetation which they feed upon. Tigers play a crucial role in the healthy, balance, and diversity

of an ecosystem. It maintains food in the food chain of the globe. Now the total extinction of tigers will lead to the enormous increase in the population of the herbivorous animals, which will consume and deplete the green vegetation much faster. Ultimately, the natural balance of our ecosystem will be completely ruined. It's not just about saving a beautiful animal. It is about making sure that our well-being is maintained as the forests are known to provide ecological services like clean air, water, pollination, temperature regulation, etc.

The Wildlife Institute of India (WII) and the National Tiger Conservation Authority (NTCA), Government of India, Anti-poaching camps, have been conducting tiger estimation surveys in partnership with NGOs (Non-government organizations). WWF, India was the key NGO partner of NTCA, WII, and state forest departments in conducting the comprehensive country-wide tiger estimation exercise. Project Tiger was launched from the Jim Corbett National Park in Uttarakhand.

Wild Life has been always an important aspect of the forests of Goa. Under the Wild Protection Act 1972, about 62 percent (J.C. Almeida, 2013) of the total area under forests was declared as a Protected Area of Wild Life Sanctuaries and National Parks. The objective was to protect and conserve the forests and wildlife. The Indian Wild Animals and Wild Birds Act Protection Act, 1965 was extended to Goa and three wildlife sanctuaries were created in 1967-68, namely, Molem (24000Ha), Cotigao (8565Ha), Canacona, and Bondla (789Ha). (J.C. Almeida, 2013).

In 1999 one National Park² and six Wildlife Sanctuaries³ existed due to extensive mining activities, as natural fauna and flora have been disturbed. Poaching is increasing in Goa, as

² National park: Mollem National Park, Sanguem, 1978.

poachers take the help of urban as well as locals to locate and kill wild animals for skin and body parts which are sold off to neighboring states. There is demand for tigers and leopard's bones which are used in Chinese medicine. Monitor lizard, locally, in Goa called Gar killed for its skin to make traditional drum called ghumat. Other animals as Sambar, wild boars, Indian bullfrogs, etc., are sold in restaurants. Due to human -animal conflicts, villagers kill big cats.

Over 80,000 tigers, more than 1,50,000 leopards, and 2,00,000 wolves were killed in a period of 50 years from 1875 to 1925. (Claude Alvares,2002). The elite with guns and vehicles like jeeps make it into the forest and shoot thousands of tigers and others. That time it was free for all. The adoption of a National Policy for Wildlife Conservation in 1970 and the enactment of the Wildlife (Protection) Act in 1972 led to a significant growth in the protected areas network, from 5 national parks and 60 sanctuaries to 87 national parks and 485 sanctuaries in 2000. (Claude Alvares,2002). In 2023, India has 18 notified biosphere reserve,106 national parks, (Times of India, 21 March 2023). 573 wildlife sanctuaries, 218 sanctuaries are proposed in the Protected Area and whereas, there are 53 tiger reserves in India. (An Illustrative Profile of Tiger Reserves of India, NTCA 2023). So, Tigers protect forests and forests protect Tigers.

Today, India's biodiversity is in danger. Due to various reasons, many wild species are disappearing rapidly. Number of species are already gone forever and rest are threatened with extinction. In almost all cases, the threats to wildlife can be traced to human activities. Goa, as a tourist destination, the attention towards the 'industrial' development leads to more accommodation facilities. Also, the governments in power started indulging in selfish corrupt

³ Wildlife Sanctuaries: Bhagwan Mahavir National Park, at Colem,1967; Cotigao Wildlife Sanctuary, Canacona,1968; Bondla Wildlife Sanctuary, Ponda,1969; Dr. Salim Ali Bird Sanctuary, Tiswadi,1988; Mhadei Wildlife Sanctuary, Sattari,1999; Netravali Wildlife Sanctuary, Sanguem, 1999. (Claude Alvares,2002)

practices. As mining industry employed local people which also again caused ecological destruction. The construction of roads, dams, and highways lead to loose of their land by many people.

1.2.3 Development

Politically, Goa was integrated with the Union of India in 1961. Country got attached along with Government of India developmental activities in the Union territory of Goa, Raman and Diu. After the statehood in 1987, Goa has no separate constitutional or legal status as it was integrated with border state of India through the hilly western Ghats. The massive developmental activities attracted migrant's population from the other states to Goa. Today, the state government made Goa an investor destination, to cater domestic and international demands. Goa has a vibrant civil society movement. It appears that Goa is opposed to everything and anything after Konkan Railway Route Realignment Quotation in 1991. But, the people who opposed to Konkan Railway are ones who are benefited amongst the most. (Vivek P. Navare, 2013). As Dabolim Airport is handling domestically, used for the nearby people of Goa Karnataka border and Mopa Airport internationally. Opposed to Mopa Airport also made a huge argument among civil society and government.

The distinction between production oriented and development (infrastructure) oriented a major discussion topic for environmental and human lifestyle. Also, the Narmada Dam Project in India was benefited after opposed by environmentalists. Any new project arrives; the government faces the challenges from Non-Governmental Organization if not then a political force. The developed facilities provide affordable prices for locals.

1.3 Significance of the study

The two biggest sanctuaries in Goa are the Mhadei Wildlife Sanctuary (208.48 sq. km) and the Netravali Wildlife Sanctuary (211.05 sq. km). (Claude Alvares, 2002). Mhadei Wildlife Sanctuary provides a link between the reserved forests of Sawantwadi and the Bhagwan Mahavir Wildlife Sanctuary. The Netravali Sanctuary bridges the corridor between the Bhagwan Mahavir Wildlife Sanctuary and the Cotigao Wildlife Sanctuary in South Goa. Thus, there is now a contiguous strip of protected forest stretching along the length towards Mhadei Wildlife Sanctuary in north of Goa, facilitating the movement of wildlife, not only in Goa but also in the area alongside the border.

Mhadei sanctuary is in Sattari taluka, with forest cover has the second highest area under forests after Sanguem. The hill ranges of this sanctuary serve as a corridor for animal movement from Karnataka into Maharashtra and vice versa. Many tigers viewed in past and present. The freshwater supply of Goa emerges from these forests where the major Goan rivers originate. Goa is already suffering from a water crisis and deforestation problem. Therefore, the creation of sanctuaries and the protection of the flora and fauna of the whole of Goa. Still, illegal activities made me think of demanding Tiger Reserve in Goa to save tigers and other forest cuttings.

Netravali Wildlife Sanctuary, is continuous to Dandeli-Anshi Tiger Reserve, Karnataka on the western side of India; Cotigao Wildlife Sanctuary, on the southern side of Goa, Bhagwan Mahaveer Sanctuary and Mollem National Park on the northern side of Goa which in turn forms a contiguous protected area along with Mhadei Wildlife Sanctuary, Goa and Bhimgad Wildlife Sanctuary, Karnataka.

The High Court of Bombay at Goa issued an order on July 24, directing the Government of Goa to declare the Mhadei Wildlife Sanctuary and its surrounding areas as a Tiger Reserve within

three months. This order was a response to a public interest litigation (PIL) filed by the Goa Foundation with support from NTCA (National Tiger Conservation Authority)

However, the Goa Government refused to declare it and also rejected the High Court order. Due to the reduction of Tigers from Goa and the conduct of forest fires and deforestation there need to save biodiversity and vegetation. The development of state decreases the nature's beauty. The people residing in these areas fear that once the tiger reserve is declared they will be forced to leave the place which means loss of their livelihood, shelter and culture associated with the place. They also fear that they may not be adequately compensated.

The killing of tigers and deforestation in some parts of the Western Ghats increased human-carnivore conflict, and the conflict between development and wildlife. Declaring the sanctuary as a tiger reserve will provide it access to technical, financial, and monitoring support from NTCA for safeguarding the conservation of the sanctuary.

It also secures biodiversity and can prevent from Mhadei water dispute. It claims that core areas are strictly taken under forest conservation where the buffer zone can lead to entry by forest dwellers. So, after having reasons to make a tiger reserve in Goa, need to study why the Goa government is against the demand of making a tiger reserve in Goa and what the local people and forest dwellers need to say about it.

Tigers are living creatures and need a forest area for movement. In the past humans and tigers are lived together without any conflict. Villagers, traditionally treated tigers as their protectors and lived in harmony with nature. The present study is an attempt to understand the different responses Goa government, The National Tiger Conservation Authority (NTCA) and Goa's environmentalists on the issue of Tiger Reservation in Goa. The study will also focus on the

petition to the high court to declare the tiger reserve in Goa to safeguard forests and sanctuaries in Goa.

1.4 Statement of the Problem

The preservation of natural habitats and wildlife conservation pose significant challenges amidst rapid economic development. This dissertation explores the complex interplay between developmental aspirations and environmental preservation, focusing on a compelling case study of a Tiger Reserve in Goa. As one of the smallest states in India, Goa represents a microcosm of the broader dilemmas faced nationally and globally in balancing economic growth with ecological sustainability. Through an interdisciplinary lens encompassing ecological sciences, economics, sociology, and policy analysis, this study aims to study the intricacies of development initiatives within the delicate ecosystem of the tiger reserve, shedding light the trade-offs, conflicts, and potential synergies between conservation efforts and developmental pursuits. By researching into this case study, the dissertation seeks to offer valuable insights on dilemmas of development with reference to tiger reserve.

1.5 Literature Review

Kacker, (2015), in his article “Contest Between Environment and Development Issues and Concerns” mentioned that the environment of development as energy, health, and improvement of poverty. Progress such as liberation, privatization, and globalization impact the trade and GDP (Gross Domestic Product) of the nation. It also mentions the destruction and drawbacks of development policy on the environment and humans. Professor Jagdish claims on Washington consensus. Whereas, Bhagwati stated that Indian Policy makers should motivate by the performances of other countries rather than by cries, so responses turn out to be for welfare and poverty reduction. The Article also mentioned the arguments of India at International Forums.

Baviskar, (1994), in her article “Fate of the Forest: Conservation and Tribal Rights” mentioned the relationship between the state, forest, and adivasi of Jhabua, Madhya Pradesh whose livelihood derives from their use of the forest. It argues, that, the future of India’s forest conservation will be successful if their tribal rights are with a tribal development program. How people are dependent on the land for cultivation now claimed as illegal by the state. Most of the people’s fines receipts are not given as its paid in pockets of forest guards, nakeders, and deputy rangers. Where the receipts are provided which could be destroyed very easily. There was poor quality of official records. ‘Nevad’ is forest crime. Converting forest land as farmland by Adivasi. Herds of goats and cattle destroyed vegetation, but still it was regenerating. To save forest under the Ministry of Environment and Forest proposed a draft bill called, ‘The Conservation of Forest and Natural Ecosystem Act’.

Mandala, (2018), in her article “Shooting a Tiger: Big Game Hunting and Conservation in Colonial India” reviewed by Tresa Abraham (2019) mentioned that the elites group with the colonial Britishers used to go on the road to hunt a tiger and every other wild animal. It was a sport which led to challenges among each other. It was the daily routine of colonial officers to get for hunting. Mandala demonstrated how colonial hunting and conservation ethos were framed to further political, military, economic, and cultural imperial agenda. Which was not only with humans and animals but also with non-human animals. Existence of Anglo-Indian Identity. As later Britishers went, still hunting was a major issue in India.

Lingaraja.et.al. (2017), in their article “Evaluating Survey Landscape for Tiger Abundance in the Confluence of the Western and Eastern Ghats” argues that the concept of Convivial conservation needs to explicitly account for the micro-politics of access and equity that emerge from intersecting social differences like gender, caste, and class within local communities. Claiming

on feminist intersectional perspectives and political ecology, the author examines how land ownership shapes differentiated livelihood opportunities and everyday lives for people living near the Corbett Tiger Reserve in India. The Village case study shows how lack of land rights, marginalization, and social norms influence residents' varied dependencies on tourism and access to benefits. The author discusses how the implementation of the Forest Act has faced hurdles due to local power dynamics, offering lessons for operationalizing equitable conservation measures.

Bijoy, (2011), in his article "The Great Indian Tiger Show" mentioned that thirty-seven years after the Project Tiger, decline in a number of tigers. The forest rights implementation has been violated and large-scale denial of rights mostly by the government officials such as forest bureaucracy, the revenue, and tribal departments. An analysis of legal provisions under the various acts reveals that none of the thirty-nine notified Critical Tiger Habitats have obtained the consent of the forest dwellers and the gram sabhas, which are illegal. An elitist conservation policy, which targeted only the tribal has resulted in illegal encroachment and activities in the tiger reserves by the state.

Nazimuddin, (2013), Synopsis from Shodh Gangotri titled "Melghat Tiger Reserve in Maharashtra: A Biogeographical Case Study", noted that human activity has negatively impacted biodiversity and rates of extinction are increasing. The Melghat Tiger Reserve (MTR) faces habitat loss and shrinking tiger territory. It was declared a Tiger Reserve in 1974 as part of Project Tiger to conserve the natural ecosystem. The MTR contains rich biodiversity including twenty mammals, forty-two reptiles, and two hundred and three bird species. It has diverse forests and a human population of 26,678 living with 28,454 livestock.

Almeida, and Fernandes, (2013), book name “Goa: Administration and Economy before and after 1962” mentioned geographical, political, and social factors during Portuguese rule and after liberation. It views the statically data about population land area covered by forest, agricultural land, and non-farming lands. The topography of Goa changed due to human involvement. The western Ghats and seas helped in boosting facilities in Goa. The development and economy correlated with one another for human development. The mining was one of the major curse to Goa nature. Administration by Portuguese and Indians brought the drastic changes in the revenue and GDP of Goa. An implementation of Acts and laws to protect the Goa environment and human Rights. But, still illegal activities lead to a struggle for forest dwellers and a poor population. The increase of human settlement in Goa led to pros and cons in Goa land.

Alvares, (2002), wrote a book named “Fish Curry Rice” a source book on Goa its ecology and lifestyle. The authors mentioned the Western Ghats ecosystem, people, and ecology depending on each other for features such as soil, river water, and materials for industries. The location of western Ghats and natural resources are useful for the survival of the population. The destruction was made due to development. Division of areas specifically on political boundary. Mentioned Flora and fauna existing in the western Ghats especially in Goa region. Classification of forests, trees, wildlife animals, rivers, and so on. Detailed information on the protection and conservation measures taken by the governments. Reason for illegal wildlife trade and preventions and management of forests, wildlife sanctuaries. The Sawant Committee Report on Goa’s private forests and afforestation procedures is counted with simple terms.

Naithani, Sahni, & Bennet, (1997), book “Forest Flora of Goa”, mentioned Goa’s scenic beauty of western Ghats or Sayadris. The topography of the western Ghats and the natural resources and

geographical statistical data of total land with categorized with forest and talukas. The areas and basic highlights of the wildlife sanctuaries.

Pai, (2005), book “The Western Ghats” mentioned the statically data about geographical areas of western Ghat covers, with degrees of latitude and longitude of Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu, Kerala. It also highlights the rivers, features of soil, and mountains. The Ecosystem conservation and Wildlife Protection subtopic covers the history of emergences of the Forest Protection Acts, Project Tiger.

1.6 Research Gap

Many kinds of research are done based on the Tiger Reserve areas in various states of India from a perspective of development in political, social, ecological, environmental, and economic, but there are hardly any studies conducted on the issues related to the case of Tiger Reserve in Goa. To study the impact on the environment and forest dwellers related to the discussion by the Goa government and NGO.

1.7 Objectives

1. To study the major reason to declare Tiger Reserve in Goa.
2. To understand why the Goa Government declined Tiger Reserve in Goa.
3. To analyze the civil society response to Tiger Reserve in Goa.
4. To understand people’s perception of the declaration of Tiger Reserve in Goa.

1.8 Hypothesis

1. The declaration of Tiger Reserve is seen as guarantee to protect the forest areas from destruction under the cover of development.

2. The declaration of Tiger Reserve may negatively impact the people living in the areas within Mhadei Wildlife Sanctuary.

1.9 Methodology

The data is collected from both primary as well as secondary sources.

- The Primary sources include government documents, interviews, and survey. The survey is limited to the responses of people from the villages in the Sattari taluka area especially from the Mhadei Wildlife Sanctuary. Around a hundred responses been collected from the people living in the Mhadei Wildlife Sanctuary area. The respondents are selected based on random sampling method. A structured questionnaire been used to collect the data.
- Secondary data will be collected from articles, official reports, newspapers, journals, magazines, and internet sources.

1.10 Chapterisation

The collected data and information from various sources are put forward in various chapters.

Chapter I: Introduction

First chapter introduced the concerned topic by giving a brief view of objectives, significance, methodology, literature review, hypothesis, statement of the problem, research gap, conceptual framework and overall idea of the Dilemmas of Development: A Case study of Tiger Reserve in Goa.

Chapter II: Forest Acts and Tiger Reserve in India

The second chapter consists of International organization and its laws to prevent forest and tigers of the world. It also includes the sustainable goals to provide efficient safeguard for forest, wildlife and human rights. The chapter consists of Indian forest and wildlife acts and policies under the MoEF&CC. Lastly, the chapter will provide the brief on Tiger Project and its reverse in India.

Chapter III: Conservation Challenges and Stakeholder Engagement: Balancing Development and Wildlife Protection in Goa's Tiger Reserve

The chapter brief on the project intake by government which further protested by environmentalists and local's residence of the area affected. This also impact on environment and are tiger reserve areas in India. Further, it provides a conflict between Goa government and environmentalist to declare tiger reserve in Goa.

Chapter IV: Case Study on Forest Dwellers of Mhadei Wildlife Sanctuary

The chapter includes the case study done in and around Mhadei Wildlife Sanctuary, by taking responses from respondents residing in that areas. It includes, Respondents demographic details and their perceptions on wildlife protections and tigers reserve including the development needed into their village are classified into graphs and charts.

Chapter V: Conclusion, Finding and Suggestions

This chapter gives overall view of the dissertation. It provides the findings and proving the hypothesis of the research paper. It also includes the suggestions of the responses.

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Chapter - II

FOREST ACTS AND TIGER RESERVES IN INDIA

2.1 Introduction

Economic and ecological globalizations have raised new issues. Industrialized world, enormous activities which harm the environment. The problem of access to technological information that is indispensable to promote sustainable development. Gandhi said, "Earth provides enough to satisfy every man's needs but anybody's greed." Sustainability balance between the interests of generations, but also to the relationship between economic and social development along with environmental protection concerning with human activities.

"Natural resources determine the course of development and constitute the challenge which may not be accepted by the human mind. ", by W. Arthur Lewis. Natural resources include land, water, fisheries, minerals, forest, marine, climate, rainfall, and topography. The size of land surface, the climate, the area under forests and the discovered mines.

Barren land, such as mountains, deserts, etc., which cannot be brought under cultivation and area under non-agricultural uses that is lands occupied by building, roads, and railways, rivers, and canals and other lands put to uses other than agricultural. Converting grazing lands and forest lands into crop lands. Bringing cultivable wastelands under the plough and shifting the cropping pattern in such a way as to divert land under fodder crops to food crops.

The real challenge to the government is to formulate a development strategy for an integrated land use plan with equal emphasis on the proper management of forest lands, grazing lands and crop lands. Forests are an important natural resources of India. They help control floods and thus

they protect the soil against erosion. They supply timber, fuel wood, fodder and a wide range of non-wood products. They are natural habitat for bio diversity. Forests, thus, play an important role in environmental and economic sustainability.

There are 573 existing wildlife sanctuaries in India and 218 sanctuaries are proposed in the Protected Area. The Bengal Tiger was declared a National animal of India in April 1973 under the initiative of Project Tiger. Prior to this, the Lion was considered the National animal of India. In order to conserve tigers as they were considered an Endangered species according to the IUCN (International Union for Conservation of Nature) Red Data book, The Tiger Reserve of India was established in 1973. Today there are 54 Tiger Reserve in India. (Wildlife Institute of India, 2023).

2.2 International Perspective

Wildlife conservation is an international effort that involves various organizations, treaties, agreements, and initiatives. Here are some key ways in which wildlife is internationally protected:

2.2.1 UNEP (United Nation Environment Programme, 1972)

The United Nations Environment Programme is the leading global authority on the environment. Its mission is to inspire, inform, and enable nations and peoples to improve their quality of life without compromising that of future generations. Over 50 years, UNEP has worked with governments, civil society, the private sector and United Nation (UN).

UNEP's work is focused on helping countries transition to low-carbon and resource efficient economies, strengthening environmental governance and law, safeguarding ecosystems, and

providing evidence-based data to inform policy decisions. UNEP supports its 193 Member States to achieve the Sustainable Development Goals and live in harmony with nature.

Providing a basis for administration of Secretariats for five MEIs (Measuring eco-innovation), are Convention on International Trade in Endangered Species (CITES), Convention on Migratory Species of Wild Animals (CMS), Convention for the Protection of the Ozone Layer, Convention on the Control of Trans boundary Movements of Hazardous Wastes and their Disposal (Basel) and Convention on Biological Diversity (CBD).

The scope of subjects in Agenda 21, the programme of action that was adopted by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 to promote sustainable development in all nations of the world. According to this agenda, the social and economic dimensions of sustainable development include issues of poverty, consumer habits and demographic development as well public health and settlement. However, there never implementing the principle of sustainable development in all these diverse fields of human activity that is equally suitable for all states.

2.2.2 2030 Agenda for Sustainable Development

The adopted by all United Nations members in 2015, created 17 world Sustainable Development Goals (SDGs). They were created with the aim of "peace and prosperity for people and the planet. They state that ending poverty and other deprivations, goes alongside strategies that improve health and education, reduce inequality, and increase economic growth – while tackling climate change and working to preserve oceans and forests. The SDGs emphasize the interconnected environmental, social and economic aspects of sustainable development by putting sustainability

at their center. (Global Sustainable Development Report, Department of Economic and Social Affairs, 2023).

Here are seventeen SDGs are: No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), Clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), Decent work and economic growth (SDG 8), Industry, innovation and infrastructure (SDG 9), Reduced inequalities (SDG 10), Sustainable cities and communities (SDG 11), Responsible consumption and production (SDG 12), Climate action (SDG 13), Life below water (SDG 14), Life on land (SDG 15), Peace, justice, and strong institutions (SDG 16), and Partnerships for the goals (SDG 17).

The 2030 Agenda did not create specific authority for communicating the SDGs; however, both international and local advocacy organizations have pursued significant non-state resources to communicate the SDGs. This campaign, Projects, had the support of corporate institutions and other international organizations. Arctic Film Festival is an annual film festival organized by HF Productions and supported by the SDGs' Partnership Platform, held for the first time in 2019, the festival is expected to take place every year in September in Longyearbyen, Svalbard, Norway. (Global Sustainable Development Report, Department of Economic and Social Affairs, 2023).

Aarhus Convention is a United Nations convention passed in 2001, explicitly to encourage and promote effective public engagement in environmental decision making. Information transparency related to social media and the engagement of youth are two issues related to the Sustainable Development Goals that the convention has addressed. (Global Sustainable Development Report, Department of Economic and Social Affairs, 2023).

Science for Accelerating Transformations to Sustainable Development, the 2023 Global Sustainable Development Report (GSDR), finds that at this critical juncture, midway to 2030, incremental and fragmented change is insufficient to achieve the Sustainable Development Goals (SDGs) in the remaining seven years. Implementation of the 2030 Agenda requires the active mobilization of political leadership and ambition for science-based transformations. This must be achieved globally - leaving no country, society or person behind. (Global Sustainable Development Report, Department of Economic and Social Affairs, 2023).

2.3 Forest Act in India

In India, it was during the British Government that they considered it imperative to have forest laws that govern and safeguard the forest and its resources in the country. The Inspector-General of Forests was first appointed in India in 1850, who realized that a proper system had to be introduced to manage the forests and train people in the science of conservation. This required rules for the forest and its resources. Hence, the Indian Forest Service was set up in 1864 under the Forest Department that worked on the formulation of the Indian Forest Act of 1865. The Act was amended twice, each in 1878 and 1927.

In 1894, the British Indian government created its first forest policy, referred to as the National Forest Policy. The policy focused on giving the state control of forests and using them to generate revenue for the government. All of the management plans, ideas from scientific management, and institutions like the forest department were aimed at increasing revenue for the British Empire.

During British rule, the Empire was not concerned with the people living in the forest, their livelihoods, or protecting forests and wildlife. Instead, a forest department was established and a cutting of trees took place. Customary rights were limited as concessions were given out to

individuals at the discretion of the forestry officials. Furthermore, forests became a considerable source of income for the government.

The Wildlife Institute of India (WII) is an autonomous institution under the Ministry of Environment, Forest and Climate Change, Government of India. It was established in 1982 with the aim of advancing wildlife research, training, and conservation in India. WII conducts research on various aspects of wildlife biology, ecology, and conservation, provides training to wildlife professionals, and assists in wildlife management and policy formulation. The institute also collaborates with national and international organizations for wildlife conservation efforts and plays a significant role in shaping wildlife conservation strategies in India. (An Illustrative Profile of Tiger Reserves of India, NTCA 2023).

The Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) earlier known as Environmental Information System (ENVIS) came into existence as a plan programme in 1983. EIACP is a comprehensive network of environmental information centers located, across the country for environmental information collection, collation, storage, retrieval and dissemination to different users. The network was expanded gradually with the involvement of thematic subject areas, such as for WII it is “Wildlife and Protected Areas Management”. (An Illustrative Profile of Tiger Reserves of India, NTCA 2023).

In present 2023, The Ministry of Environment, Forest and Climate Change (MoEFCC) is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India’s environmental and forestry policies and programmes. This ministry is headed by Secretary Rank senior most IAS officer. The ministry portfolio is currently held by Shri Bhupender Yadav, Union Minister of

Environment, Forest and Climate Change. (An Illustrative Profile of Tiger Reserves of India, NTCA 2023).

2.3.1 The Forest Act of 1865

The aimed to regulate the use of forest resources, particularly timber, by imposing restrictions on cutting and felling trees. It primarily focused on revenue generation through timber extraction and imposed penalties for unauthorized cutting of trees. The act empowered forest officers to enforce regulations and collect revenue from forest produce. It did not much forces on conservation or wildlife protection. This act laid the foundation for subsequent forest legislation in India and marked the beginning of formal regulation of forest resources.

2.3.2 Indian Forest Act, 1878

The aimed to consolidate and refine the provisions of the earlier forest laws, particularly addressing issues related to forest management and revenue collection. The forests in India were divided into three different categories: Reserved Forests, Protected Forests and Village Forest. Villagers could not take anything from the Reserved Forests for their own use. Villagers could use the forest products only from the village forests and protected forests, either to build their house or for fuel. In 1878, the Forest Act took away communal rights to forests and replaced them with privileges, which had to be paid for. Later, in 1894, the first Forest Policy was established, with a focus on agriculture rather than forests.

2.3.3 Indian Forest Act, 1927

In order to make the Forest Act, 1878 more effective and more comprehensive, a new Forest Act was passed in 1927 which repealed all the previous laws and legislations. The new act consisted of 13 chapters and 86 sections.

The Forest Act aims to streamline the legal framework governing forests by consolidating relevant laws and regulating the transit of forest produce. It introduces measures to levy duties on timber and other forest products, while also defining prohibited activities within reserved forests and outlining offences related to forest conservation. Additionally, the Act emphasizes the importance of preserving the quality of lakes, ponds, and rivers within forested areas. To enhance forest management, the legislation advocates for the appointment of skilled professionals and the adoption of advanced technologies. Furthermore, it underscores the imperative of spreading awareness about the critical need for forest conservation and mitigating the impact of agrarian and other activities on forest ecosystems. The Act also establishes forest offences and grants State Governments the authority to impose penalties for contraventions, thus reinforcing the enforcement mechanisms for safeguarding forests. Its deep investigation of the act reveals that the real intention behind the new provisions, rules and regulations of the act was to earn revenue from the forest-produce i.e., cutting down of trees, wood, timber, fodder, rocks and minerals. This act gave a lot of power to the forest officials and bureaucracy which often led to exploitation of the forest dwellers, rights and privileges to use the forest-produce. This act never aimed to regulate the cutting of trees, but to earn revenue from cutting of trees to such an extent that it does not destroy the forest-land.

2.3.4 Indian Forest Policy, 1952

The target was to provide green cover over two thirds of the land area in the hills and mountains. To achieve this goal, it was necessary to secure the long range development of forest resources on the one hand and to meet the increasing demand for timber and firewood on the other. The main objectives of the forest policy under the Five Year Plans were: to increase the productivity of forests, to link up forest development with various forest based industries and to develop forests as a support to rural economy.

Keeping these broad guidelines, efforts were directed in the following specific areas: Afforestation Measures, Social Forestry: The Government of India accepted the recommendation of the National Commission on Agriculture (1976) and agreed to set up social forestry projects on non-forest lands, public lands and on village commons. This were financed by the world bank and other foreign aid agencies.; Forest Development Corporations: seventeen autonomous Forest Development Corporations set up in various states and union territories focus on raising new plantations, developing infrastructure, to exploit forest resources through large scale investment in economically viable projects, logging and marketing timber and minor forest produce and so on.; National Wastelands Development Board (NWDB) in 1985, the Prime Minister Rajiv Gandhi announced: "we shall develop a people's movement for afforestation." While the ecological degradation of Western Ghats and Eastern Ghats is continuing increasing. Massive deforestation began with the indiscriminate cutting down of vast tracts of trees beginning with those nearest the villages from which the villagers traditionally got more than 50 percent of their food and met their fodder and fuel requirements. (Gaurav Datt, Ashwani Mahajan, 2018). The programme has badly distorted to benefits large landowners and industrial and commercial classes and has become an anti-people programme.

2.3.5 National Forest Policy, 1988

The 1952 forest policy had failed to stop the serious depletion of forest wealth over the years. The Ministry of Environment and Forests of the Government of India announced its new forest policy in December 1988. The Forest (Conservation) Act, 1980 an Act of the Parliament of India to provide for the conservation of forests. It was further amended in 1988. This policy importance the primacy of tribal and local communities and provided for a sustainable management approach with maintenance of environmental stability as the prime objective.

At the time of general elections mindless construction of multipurpose irrigation dams destroying prime forests, extension of mining and construction of townships and above all illegal felling of tress, all these directly result in rapid deforestation. Government policies on afforestation have attracted the greatest public criticism.

2.4 The Forest Conservation Act, 1980, 1988, and 1996

To address the problem of deforestation, the Forest Conservation Act (FCA), 1980, came into force. The Forest Conservation Act was amended twice in 1988 and 1996. In spite of recent efforts to increase forest cover through reforestation, being carried out mainly under Compensatory Afforestation Management and Planning Authority (CAMPA).

The Forest Conservation Act was enacted in 1980 to protect and conserve the country's forests. The National Forest Policy of 1988 was enacted to revise the previous National Forest Policy of 1952. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act was passed in 2006 to address the historical injustice done to forest dwellers.

The 42nd Amendment also introduced a new Directive Principle of State Policy (Article 48-A) and a Fundamental Duty [51 (A) (g)]⁴ for the protection and improvement of the forests. These provisions provide as under:

The prohibiting the state governments from allowing the use of forest lands for any purpose without the approval of the central government. The ordinance was later passed into an Act (1980). But somehow, the government was not satisfied with the powers conferred on it under the Act of 1980 and tried to increase these with the Forest (Conservation) Amendment Act of 1988.

The central act, applies to the whole of India except the state of J&K (Jammu and Kashmir) under the section 2 of the act (amendment in 1988), provides that no state government can make any order de-reserving a reserved forest or directing for any forest land may be used for any non-forest purpose or leased out to any private party or even cleared of trees for the purpose of any re- afforestation or social forestry scheme without prior permission from the central government.

This important provision was introducing to ensure that the state government do not force to local pressure to divert the forest heritage of the country. However, taking advantage of the fact that in most state records land is not accurately classified, private parties especially large companies, sought to bypass the need for approval the central government by seeking refuge in the fact that the land where forest is sought to be cleared was not classified as forest land. This even when site visit showed the land as forested.

⁴ 1. Article 48-A – Protection and improvement of environment and safeguarding of forests and wildlife. The State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country.

2. Article 51(A) (g) – It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.

Integrated Forest Protection Scheme to provide assistance to states for building capacity and basic infrastructure for modern forest management. The setting up of Indian Institute of Forest Management (IIFM), Wildlife Institute of India, Indian Council of Research and Education, Indian Plywood Industries Research and Technology Institute etc. are some of the initiatives to promote and strengthen the management of forests.

2.5 The Wildlife (Protection) Act, 1972

It extends to the whole of India except the State of Jammu and Kashmir. It shall come into force in a State or Union territory to which it extends, on such date as the Central Government may, by notification, appoint, and different dates may be appointed for different provisions of this Act or for different States or Union territories.

2.5.1 Terms that majorly used in the Act

“Habitat” includes land, water or vegetation which is the natural home of any wild animals. The “hunting” “killing or poisoning of any wild animal or captive animal and every attempt to do so, capturing, coursing, snaring, trapping, driving or baiting any wild or injuring or destroying or taking any part of the body of any animal or in the case of wild birds or reptiles, damaging and disturbing the eggs of such birds or reptiles is strictly prohibitive in forests.

“Protected Areas” means a National Park, a sanctuary, a conservation reserve or a community reserve notified under sections 18, 35, 36A and 36C of the Act.⁵ “Reserve Forest” means the

⁵ Section 18 of the Wildlife Protection Act deals with the declaration of sanctuaries. It empowers the state government to declare any area as a sanctuary if it considers it necessary for protecting, propagating, or developing wildlife or its environment.

Section 35 deals with the power of the central government to declare certain areas as national parks.

Section 36A pertains to the constitution of the National Board for Wildlife.

forest declared to be reserved by the State Government under section 20 ⁶ of the Indian Forest Act, 1927 or declared as such under any other State Act.

The “Sanctuary” means an areas declared as a sanctuary by notification under the provisions of chapter IV ⁷ of this Act and shall also include a deemed sanctuary under sub-section (4) of section 66. ⁸ (Maneka Gandhi, Ozair Husain, Raj Panjwani;2013).

2.5.2 Function of the National Board

- 1) It shall be the duty of the National Board to promote the conservation and development of wild life and forests by such measures as it thinks fit;
- 2) Framing policies and advising the Central Government and the State Governments on the ways and means of promoting wild life conservation and effectively controlling poaching and illegal trade of wild life and its products;
- 3) Making recommendations on the setting up of the management of national parks, sanctuaries and other protected areas and on matters relating to restriction of activities in those areas;

Section 36C deals with the powers and functions of the State Board for Wildlife.

⁶ Section 20 of the Indian Forest Act, 1927, grants the State Government the authority to create rules regulating the transit of forest produce, such as wood and timber. These rules help control and monitor the movement of forest resources to prevent illegal activities and ensure sustainable utilization.

⁷ t prohibits hunting without proper authorization, possession or trade of wild animals and their derivatives, and the use of prohibited traps or explosives. The chapter outlines penalties for violations and provides exceptions for certain circumstances like self-defense or scientific research.

⁸ Sub-section (4) of Section 66 states that no person shall commence or carry on the business of taxidermy unless he holds a valid permit issued by the Chief Wildlife Warden or any other officer authorized by the State Government in this behalf.

- 4) Carrying out or causing to be carried out impact assessment of various projects and activities on wild life or its habitat;
- 5) Reviewing from time to time, progress in the field of wild life conservation in the country and suggesting measures for improvement there, and
- 6) Preparing and publishing a status report at least once in the two years on wild life in the country.

2.5.3 Duties of State Board for Wild Life

- 1) To advice the state government in the selection and management of areas to be declared as protected areas.
- 2) Collect Information of the policy for protection and conservation of the wild life and specified plants.
- 3) In any matter relating to the amendment of any Schedule in relation to the measures to be taken for harmonizing the needs of the tribal and other dwellers of the forest with the protected and conservation of wild life
- 4) In any other matter connected with the protection of wild life which may be referred to it by the State Government.

2.5.4 Hunting of Wild Animals

The Chief Wild Life Warden may, if he is satisfied that any wild animal specified in Schedule I has become dangerous to human life or is so disabled or diseased as to beyond recovery, by order in writing and stating the reasons therefore, permits any person to hunt such animal or cause such

animals to be hunted. Provided that no wild animal shall be ordered to be killed unless the Chief Wild Life Warden is satisfied that such animals cannot be captured, tranquillized or translocate. Any wild animal killed or wounded in defense of any person shall be Government property.

2.5.5 Protected Areas

The State Government can declare an area of ecological significance as a sanctuary to protect wildlife and its environment, with alterations to boundaries requiring National Board recommendation. Only authorized personnel, residents, those with property rights, or those passing through along public highways can enter. Destruction of wildlife or habitat is prohibited without a permit from the Chief Wildlife Warden. The Chief Wildlife Warden manages sanctuaries, ensuring security, preservation, and minimal livestock grazing. Construction inside sanctuaries requires National Board approval. The State Government forms an Advisory Committee comprising various stakeholders to advise on sanctuary conservation and management, including removal of encroachments and unauthorized structures. Enforcement is carried out by authorized officers.

2.6 Safeguarding Western Ghats: The corridor for tiger's movement

The Western Ghats Task Force (WGTF) was established in the year 2010 under the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. It was formed in response to growing concerns about the ecological degradation and loss of biodiversity in the Western Ghats region due to various human activities. The task force was mandated to study the environmental challenges facing the Western Ghats and to make recommendations for conservation and sustainable development in the region.

The Western Ghats Ecology Authority (WGEA) is a statutory body established by the Government of India under the provisions of the Environment (Protection) Act, 1986. It was created with the objective of conserving and protecting the biodiversity and ecological integrity of the Western Ghats region. The WGEA was officially established in 2010 by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India.

The Western Ghats Special Ecology Task Force (WGSETF) was constituted by the Government of India to address the recommendations of the Gadgil Committee and the Kasturirangan Committee regarding the conservation of the Western Ghats. In 2011, the Government of India appointed the Western Ghats Ecology Expert Panel (WGEEP), also known as the Gadgil Committee after its chairperson Dr. Madhav Gadgil, later, the Government of India constituted the High-Level Working Group (HLWG) headed by Dr. K. Kasturirangan in 2013. The Kasturirangan Committee proposed a revised zoning system with fewer restrictions compared to the Gadgil Committee's recommendations.

2.7 National Tiger Conservation Authority, 2005

The National Tiger Conservation Authority (NTCA) has been constituted under section 38 L (1) as a statutory body under of Wildlife (Protection) Act, 1972, following the amendment in 2006. The NTCA plays a crucial role in coordinating and implementing tiger conservation initiatives in India, contributing significantly to the country's efforts to protect its national animal and preserve its biodiversity.

2.7.1 The section 38L, sub section 2 of the Act, the authority consists

- (a) The Minister in charge of the Ministry of Environment and Forests-Chairperson,
- (b) The Minister of State in the Ministry of Environment and Forests - Vice-Chairperson,

- (c) Three members of Parliament of whom two shall be elected by the House of the People and one by the Council of States,
- (d) Eight experts or professionals having prescribed qualifications and experience conservation of wild life and welfare of people living in tiger reserve out of which at least two shall be from the field of tribal development,
- (e) Secretary, Ministry of Environment and Forests,
- (f) Director General of Forests and Special Secretary, Ministry of Environment and Forests,
- (g) Director, Wild Life Preservation, Ministry of Environment and Forests,
- (h) Six Chief Wild Life Wardens from the tiger reserve states in rotation of three years,
- (i) An officer at below the rank of Joint Secretary and Legislative Counsel from the Ministry of Law and Justice,
- (j) Secretary, Ministry of Tribal Affairs,
- (k) Secretary, Ministry of Social Justice and Empowerment,
- (l) Chairperson National Commission for the Scheduled Tribes,
- (m) Chairperson, National Commission for the Scheduled Castes,
- (n) Secretary, Ministry of Panchayati Raj,
- (o) Inspector-General of Forests or an officer of the equivalent rank having at least ten years' experience in a tiger reserve or wildlife management, who shall be the Member-Secretary.

The authority derives its power from section 38 O (1) of WLPA, 1972⁹ and functions under the guidance of Chairperson, Vice-Chairperson and members.

2.7.2 Powers and Functions of Tiger Conservation Authority

The responsibilities outlined in the passage pertain to the administration and oversight of tiger reserves, as mandated by the Tiger Reserve Act of 1973. These responsibilities include the approval of Tiger Conservation Plans prepared by State Governments, with a focus on sustainable ecology and the prevention of ecologically harmful activities such as mining within tiger reserves. The authority is also tasked with setting standards for tourism activities and ensuring their compliance, as well as managing conflicts between humans and wild animals, promoting co-existence, and providing protection measures for tiger populations and their habitats. Additionally, the authority oversees research and monitoring on tigers and their ecosystems, ensures the protection of corridors between protected areas, supports biodiversity conservation initiatives, and provides critical support for the implementation of conservation plans, including capacity-building programs for reserve staff. These measures collectively aim to safeguard tiger populations and their habitats while promoting sustainable development practices within and around tiger reserves.

2.7.3 Grants and loans to Tiger Conservation Authority and Constitution of Fund

- (1) The Central Government may, after due appropriation made by Parliament by law in this behalf, make to the Tiger Conservation Authority grants and loans of such sums of money as that Government may consider necessary.

⁹ Section 38O (1) of the Wildlife (Protection) Act, 1972, mandates the establishment of a State Board for Wildlife in every state or union territory to advise the government on matters related to wildlife conservation and protection.

- (2) There shall be constituted a Fund to be called the Tiger Conservation Authority Fund and there shall be credited thereto: (i) any grants and loans made to the Tiger Conservation Authority by the Central Government; (ii) all fees and charges received by the Tiger Conservation Authority under this Act; and (iii) all sums received by the Authority from such other sources as may be decided upon by the Central Government.
- (3) The Fund referred to in sub-section (2) ¹⁰ shall be applied for meeting salary, allowances and other remuneration of the members, officers and other employees of the Tiger Conservation Authority and the expenses of the Tiger Conservation Authority incurred in the discharge of its functions.

The Tiger Conservation Authority maintains proper accounts audited by the Comptroller and Auditor-General of India. The Tiger Conservation Authority prepares an annual report of its activities than the reports are forwarded annually to the Central Government; Scheduled Tribes and forest dwellers' rights are safeguarded, and resettlement only occurs under specific conditions. The Crime Control Bureau Tiger and Other Endangered Species are part of Wildlife Protection Act. (Maneka Gandhi, Ozair Husain, Raj Panjwani; 2013).

2.8 Project Tiger, 1973

" It is believed that there were more than 40,000 tigers in India some 80 years ago. Habitat destruction, rampant poaching and hunting brought about a sharp decline in their numbers. The National census of tigers in 1972 recorded the existence of only 1827 animals. Considering the alarming endangered status of this majestic animal, the Government of India with support of WWF (World Wild Fund) launched a scheme to protect the tiger called "Project Tiger" with nine

¹⁰ Sub-section (2) of section 24 of the Wild Life (Protection) Act, 1972 authorizes the Collector to acquire such land or rights. Therefore, payment of compensation for the immovable property of people forms part of modifying or settling their rights which is a statutory requirement.

sanctuaries declared as tiger reserves. More tiger reserves were added in due course of time and today there are more than forty national parks/sanctuaries under Project Tiger. " (Mohan Pai, 2005).

The main objective of Project Tiger, is to ensure maintenance of a viable population of tiger in India, and to preserve, for all time, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people.

The ex-Prime Minister of India, Mrs. Indira Gandhi, a strong supporter of the Project, and of conservation in general observed, "The tiger cannot be preserved in isolation. It is the apex of a large and complex biotope. Its habitat, threatened by human activities, forestry and cattle grazing, must first be made inviolate". Project Tiger is a holistic conservation programme. The tiger cannot be saved in isolation. Saving the tiger involves the maintenance of a viable population of its prey species the herbivore animals. For the herbivores to survive it has to be ensured that the vegetation of the forests is rich and varied. Thus saving tiger means saving an entire ecosystem.

The project is administered jointly by the wild life department of both the State and the Centre. Project tiger, initiative in 1st April 1973 of the most comprehensive conservation efforts. Since the launch of the tiger conservation movement and the 'Project Tiger' in India, the tiger has made a dramatic recovery. Improvement in the quality of habitat and available prey has been considerable not only within the Project Tiger reserves, but also outside in Anaimalais and Nagarhole ¹¹in the Western Ghats. Further to the managing the systems of Protected Areas and initiatives such as afforestation, eco-development, Joint Forest Management.

¹¹ Anaimalai Hills: Mountain range in the Western Ghats of Tamil Nadu and Kerala, India, known for rich biodiversity and endangered species.

2.9 Tiger Reserves in India

India boasts a network of tiger reserves dedicated to the conservation and protection of its national animal, the Bengal tiger. These reserves play a pivotal role in safeguarding not only the tiger population but also the entire ecosystem they inhabit. As of the latest available data, there are over 50 tiger reserves spread across the country, encompassing diverse landscapes and habitats. These reserves are strategically located in different states, covering a significant portion of India's forested areas.

Each tiger reserve is meticulously planned and managed, with designated core and buffer zones aimed at providing undisturbed habitats for tigers and other wildlife species. The core zones are strictly protected, with minimal human interference to ensure the conservation of biodiversity and natural processes. Buffer zones, on the other hand, allow for regulated human activities such as tourism and sustainable resource utilization while maintaining ecological connectivity with the core areas.

The management of tiger reserves involves a collaborative effort between various stakeholders, including government agencies, local communities, non-governmental organizations, and conservationists. State Forest Departments typically oversee the day-to-day operations of the reserves, while national bodies like the National Tiger Conservation Authority (NTCA) provide guidance, support, and funding for conservation efforts.

One of the primary objectives of tiger reserves is to monitor and conserve tiger populations through scientific research, habitat management, anti-poaching measures, and community engagement. Conservation initiatives within these reserves often involve habitat restoration, wildlife monitoring using advanced technologies like camera traps and GPS collaring, and

community-based conservation programs aimed at reducing human-wildlife conflicts and promoting sustainable livelihoods.

Tourism also plays a significant role in tiger reserve management, providing opportunities for visitors to experience India's rich biodiversity while generating revenue for conservation activities and local communities. However, tourism activities are carefully regulated to minimize disturbances to wildlife and their habitats.

Despite concerted conservation efforts, tiger reserves continue to face numerous challenges, including habitat fragmentation, poaching, human-wildlife conflicts, and encroachment. Climate change poses an additional threat, altering ecosystems and affecting prey availability for tigers. Addressing these challenges requires sustained political will, robust law enforcement, community participation, and innovative conservation strategies tailored to the unique circumstances of each reserve.

The tiger reserves in India serve as vital sanctuaries for the protection of tigers and their habitats, embodying the country's commitment to wildlife conservation. Through collaborative efforts and adaptive management practices, these reserves strive to ensure the long-term survival of tigers and the ecological integrity of their landscapes, contributing to India's biodiversity conservation efforts on a global scale.

2.10 Conclusion

In conclusion, the Forest Acts and Tiger Reserves in India serve as vital legal frameworks for the preservation and management of the country's rich biodiversity and natural resources. These legislative measures have evolved over time to address the complex challenges posed by deforestation, habitat degradation, and wildlife conservation. By consolidating laws related to forests, regulating activities within tiger reserves, and promoting sustainable development

practices, these Acts play a crucial role in balancing the needs of ecological preservation with economic development. Additionally, the establishment of Tiger Reserves underscores India's commitment to protecting its iconic tiger population and their habitats. However, challenges such as illegal logging, poaching, habitat fragmentation, and human-wildlife conflicts persist, necessitating continuous efforts to strengthen enforcement mechanisms, enhance community participation, and invest in research and monitoring initiatives. Moving forward, a holistic approach that integrates conservation objectives with socio-economic development imperatives will be essential for ensuring the long-term sustainability of India's forests and tiger reserves.

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Chapter - III

CONSERVATION CHALLENGES AND STA KEHOLDER ENGAGEMENT: BALANCING DEVELOPMENT AND WILDLIFE PROTECTION IN GOA'S TIGER RESERVE

3.1 Introduction

A huge areas of forest are burned or cleared to make space for crops and livestock. Deforestation and forest degradation are the biggest threats to forests worldwide. Deforestation occurs when forests are converted to non-forest uses, such as agriculture, tourist's industry and road construction. There should be Proper Utilization of Forest and Forests Products.

The Godavarman Thirumulkpad case, also known as the Godavarman case, originated from a public interest litigation (PIL) filed in 1995 before the Supreme Court of India. The petitioner, Mr. Godavarman Thirumulkpad, raised concerns about the protection and conservation of forests across the country. The case was prompted by widespread deforestation and environmental degradation occurring due to various activities such as logging, mining, industrial expansion, and encroachment on forest lands. Mr. Thirumulkpad sought judicial intervention to address these issues and ensure the effective implementation of forest conservation laws.

The Supreme Court, recognizing the gravity of the situation and the need for comprehensive action, took up the case and issued several landmark directives. Among these directives was the requirement for all states to conduct comprehensive surveys to identify and demarcate forest areas accurately. The purpose of these surveys was to determine the extent of forest cover and assess the status of forest lands. Furthermore, the Supreme Court directed states to form committees, often referred to as "Godavarman Committees," to oversee the protection and

management of forests. These committees were tasked with monitoring forest activities, preventing illegal logging and encroachments, and recommending measures for the conservation and sustainable use of forest resources.

The case also emphasized the importance of involving local communities and indigenous tribes in forest conservation efforts. The Supreme Court stressed the need for their participation in decision-making processes concerning forest management, as their livelihoods often depend on forest resources. Over the years, the Godavarman case has led to numerous significant judgments and orders aimed at safeguarding India's forests and biodiversity.

A significant judgment by the Bombay High Court, Goa Bench, in 1990 reinforced laws aimed at preventing large-scale tree cutting and forest land degradation. They looked at the Tree Act and Forest Act to help protect trees and forests better. Even if land isn't officially called a forest, if it looks like one and has trees, it should be protected. This ruling was applied in cases against companies like Chowgule and Tata Housing Development Company (THDC) accused of illegal land use and tree felling. (H.B. Naithani, K.C. Sahni, S.S.R. Bennet; 1997).

The involved Environmental organizations, the Goa Foundation and Peaceful Society, actions against companies like the Chowgule Company, accused of illegally clearing forest land for industrial purposes in Sanguem Taluka. Also, The Goa Foundation and Nirmal Vishwa challenging the construction of an elite housing colony by Tata Housing Development Company (THDC) on forested land in Penha da Franca village, Bardez Taluka. Despite initial approvals, the courts intervened, siding with environmental groups, emphasizing the importance of protecting green spaces. (H.B. Naithani, K.C. Sahni, S.S.R. Bennet; 1997).

The Sawant Committees were formed to assess land classifications, confirming forest status in disputed areas. The court said it's super important to keep nature safe and green. They also told big companies they can't just do whatever they want, especially if it hurts the environment. These big wins showed everyone that the courts care about nature and want to keep it safe for everyone. (H.B. Naithani, K.C. Sahni, S.S.R. Bennet; 1997).

3.2 Development impacted on Tiger Reserve in India

India faces several environmental issues, air pollution, water pollution, deforestation, soil erosion, and loss of biodiversity. Rapid industrialization, urbanization, and population growth contribute to these problems. Inadequate waste management and unsustainable agricultural practices causes environmental degradation. Efforts to address these issues include policies to promote renewable energy, improve waste management, and protect natural habitats, but implementation challenges remain. These cases highlight the ongoing tension between economic development initiatives and environmental conservation efforts in India, with environmentalists often advocating for stricter regulations and sustainable development practices. There have been numerous cases in India where environmentalists have challenged the government's decisions or actions regarding environmental issues. Some notable cases include:

- 1) The Panna Tiger Reserve is located in the state of Madhya Pradesh. It was established as a wildlife sanctuary in 1981 and was later declared a tiger reserve in 1994. The reserve encompasses an area of approximately 543 square kilometers and is known for its diverse flora and fauna, including the Bengal tiger. The Ken-Betwa River Linking Project in early 2000s aims to transfer surplus water from the Ken River basin in Madhya Pradesh to the water-deficient Betwa River basin in Uttar Pradesh through a canal. This interlinking of rivers involves the construction of a dam on the Ken River, which would

submerge a significant portion of the Panna Tiger Reserve in Madhya Pradesh. The Critics argue that the forest areas would lead to habitat loss, displacement of wildlife, and disruption of the ecological balance within the reserve. As part of the Phase-I of the project, the Daudhan dam will be built on the Ken inside the core area of the Panna Tiger Reserve. This dam, which will store water to be transported to Betwa basin in link canals, will submerge over 90 sq km of area, of which 60 sq km lies inside the tiger reserve. (Nikhil Ghanekar,2023).

- 2) Coal Mining in Forest Areas: The complex challenges associated with coal mining in forest areas in India, where the need for economic development often conflicts with environmental conservation and indigenous rights. Balancing these competing interests requires careful consideration of sustainable development practices, conservation efforts, and meaningful engagement with local communities.

(a) Talabira Coal Block, Odisha: The Talabira coal block in Odisha is located in a dense forest area close to the Satkosia Tiger Reserve, which is one of the tiger reserves in the state of Odisha. In 2019, the Indian government approved the expansion of coal mining by Neyveli Lignite Corporation (NLC) in this region. This decision faced criticism from environmentalists and local communities due to concerns about deforestation, loss of biodiversity, and displacement of indigenous people. (Sanjay Dutta,2020).

(b) The Pench Tiger Reserve in southern part of Madhya Pradesh, bordering Maharashtra, has been under threat from coal mining activities. While the reserve itself is not directly affected by coal mining, the surrounding areas, including forests and wildlife corridors, may experience adverse impacts due to mining operations. In 2019, Mahan Coal Limited, a joint venture between Essar Power and Hindalco Industries, secured a coal mining lease

for the Mahan coal block in Singrauli district, Madhya Pradesh. The coal block falls within the catchment area of the Mahan River, a tributary of the Son River, which flows through the Pench Tiger Reserve. Concerns have been raised about the potential impact of coal mining activities on the water resources and ecology of the region.

(c) The impact of activities in the Hasdeo Arand Forest, Chhattisgarh, on nearby Achanakmar Tiger Reserve. The coal mining such as the Parsa East and Kanta Basan coal blocks have faced resistance from environmentalists and activists who argue that mining would lead to irreversible damage to the forest ecosystem and displace local communities.

(d) The Satpura Tiger Reserve, located in the central Indian state of Madhya Pradesh, is known for its rich biodiversity and is home to diverse flora and fauna, including the Bengal tiger. The loss of 180 square kilometers of forest within the reserve to coal mining and encroachments represents a substantial area of habitat degradation and destruction. (Vijay Pinjarkar,2020).

- 3) Western Ghats Project Plans: for expanding highways and constructing new roads in the Western Ghats have raised concerns about habitat fragmentation, increased vehicular traffic, and road kill of wildlife. Projects such as the widening of National Highway 66 (formerly NH-17) ¹² along the west coast have faced opposition from environmental groups advocating for sustainable transportation solutions. In some cases, NH-17 intersects with wildlife corridors or buffer zones surrounding tiger reserves.

¹² NH-66 extends from Panvel near Mumbai in Maharashtra to Kanyakumari in Tamil Nadu. It travels through the states of Maharashtra, Goa, Karnataka, and Kerala using western Ghats route.

3.3 Key Legal Battles and Policy Implications in Goa's Conservation Sphere

1) Goa Mining Ban (2012)

Mining has been a significant industry in Goa, particularly in the extraction of iron ore. The mining industry in Goa has a long history, but it has also been marred by controversies related to illegal mining, environmental degradation, and violations of mining regulations. In 2012, the Supreme Court of India imposed a temporary ban on mining activities in Goa following a report by the Justice M.B. Shah Commission, which highlighted widespread illegal mining in the state. The ban was primarily aimed at addressing environmental concerns and restoring order in the mining sector.

The suspension of mining activities had a significant impact on the economy of Goa, as mining was one of the main sources of revenue and employment in the state. Thousands of people, including mine workers, truck drivers, and ancillary workers, were affected by the ban, leading to economic distress in the region. The Supreme Court lifted the ban on mining activities in Goa in 2014, allowing mining operations to resume under certain conditions. However, the resumption of mining faced further hurdles, including delays in the renewal of mining leases and legal challenges. Illegal ones, were associated with deforestation, soil erosion, water pollution, and disruption of local ecosystems. The ban aimed to address these environmental concerns and prevent further damage to Goa's natural resources. Still illegal activities are ongoing in the forest areas.

Here are some protesters as follows:

- a) Goa Mining People's Front (GMPF) was a coalition of mining workers, truck owners, and others affected by the mining ban in Goa. It organized numerous protests, rallies, and

demonstrations to demand the resumption of mining activities and highlight the economic hardship faced by those dependent on the mining industry.

- b) Claude Alvares, a prominent environmental activist and the director of the Goa Foundation, was actively involved in raising awareness about the environmental impacts of mining and advocating for stricter regulations in the mining sector. He has been critical of illegal mining practices and has campaigned for sustainable development in Goa.
- c) Abhijit Prabhudesai, a journalist and social activist, played a significant role in organizing protests against illegal mining and advocating for transparency and accountability in the mining sector. He was associated with the movement to demand justice for victims of the mining scam in Goa and has been vocal about the need for responsible mining practice.

2) Mhadei River Diversion Project

The proposed Mhadei River Diversion Project also known as the Kalasa-Banduri Nala project, is a contentious water diversion scheme proposed by the Government of Karnataka in India. The project aims to divert water from the Mhadei River (known as the Mandovi River in Goa) to the Malaprabha River basin, which supplies water to the drought-prone regions of North Karnataka. Involves diverting water from the Mhadei River, a lifeline for the ecologically Western Ghats region, to address water shortages in other parts of Goa. Environmental Concerns including habitat degradation, loss of biodiversity, impact on wildlife such as tigers and disruption to riverine ecosystems. The project protested by many environmentalists and civil society. To safe

Mhadei the proposal for tiger reserve case which was pending from 90's again rises its voice in High Court of Bombay.

3) Galjibaga Turtle Conservation

Galjibaga Beach in South Goa is a nesting site for Olive Ridley turtles, a critically endangered species. The proposed coastal development projects in the area have raised concerns among environmentalists that coastal development activities such as beach shacks, resorts, and tourism infrastructure could disturb the nesting sites of Olive Ridley turtles, leading to a decline in their population. They argue that artificial lighting, noise pollution, and human presence can deter turtles from nesting or disorient hatchlings. Efforts have been made to regulate beachfront development, enforce restrictions on artificial lighting, and implement conservation measures to protect nesting turtles. As turtles are in danger more than tigers are in forest areas.

3.4 Goa's Forests Roar: Tigers Spotted

The Tiger reserves are designated habitats for the conservation of tigers and their prey base. Under the Wildlife Protection Act, 1972, a tiger reserve is legally mandated to designate a critical core area over which human habitation and resource extraction is not permitted. This area is encircled by a buffer zone that permits multiple human activities which give precedence to conservation objectives.

In Sattari taluka is having largest forest areas after Sanguem taluka. Sansogad is the tallest mountain in Goa and the second highest is Catianchi Mauli. The third largest is Vagheri Hill (dedicated to tiger's area). All three mountains are from Sattari taluka. These mountains act as the corridors for animal movements from Karnataka into Maharashtra and vice versa.

Sacred groves a traditional forest conservation practice in Goa, are more than fifty in Sattari taluka. Most are located into protected areas. The present area proposed for declaration as a sanctuary under section 18 of the Wildlife (Protection) Act, 1972¹³ also covering two forest ranges, viz. Valpoi and Keri. The area proposed for has already been declared and notified under Section. 4 and 20 of the Indian Forest Act, 1927¹⁴, and as per land belong to the Goa Forest Department.

In Sanguem taluka, there forests are culturally bond by the forest dwellers. At Bati there is place called Vaagpedi (cave of the tigers). Villagers says that tiger visit this place. There is a scared grove called Goelho Rai at this place. At Kumari (Bati Panchayat), there is a scared grove called Kalas Dev spread over the land and consists of two temples. At the same Panchayat, a water hole called Kajre Tol is visited by Tigers according to the villagers. The tiger sighting has seen reported from Vichundre and at Ghato Dongar at Pata-Netroli. This is also main area for water supply for villagers. The forest of Sanguem taluka ranks second in India and eighth in the world as the finest tiger habitat in the entire world. These forests are corridor for tigers to move from Karnataka into Goa. (Claude Alvares, 2002).

¹³Section 18 of the Wildlife (Protection) Act, 1972, establishes the National Board for Wildlife (NBWL), chaired by the Prime Minister of India. The NBWL advises the Central Government on wildlife protection policies, reviews proposals for protected areas, and recommends measures for habitat management. It consists of ex-officio members, NGO representatives, and MPs, and plays a crucial role in wildlife conservation and policy formulation in India.

¹⁴Section 4: This section empowers the state government to declare specific areas as reserved forests, protected forests, or village forests. Reserved forests are areas designated for the conservation and management of forest resources, and they are under the exclusive control of the government. Protected forests are managed for sustainable use, while village forests are managed by local communities.

Section 20: Section 20 deals with offenses related to the cutting, girdling, lopping, or injuring of trees in reserved forests or protected forests without lawful authority. It prohibits unauthorized acts that harm or damage forest resources and imposes penalties for such offenses, including fines and imprisonment.

After one sighting in 2012-2013, for the next few years, the state forest department did not report any. (Times of India, july-22). Then in 2016-17, there were 10 sightings, of which eight were on camera traps, one due to scrapping and another owing to a kill. 2017-18, there were only four sightings. The following year there was a further drop in the number of sightings at just two. Sightings picked up the following years with four tigers sighted in 2019-2020 and five in 2020-2021. These numbers increased four-fold in 2021-22. (Times of India, july-22). There were a total of 20 tiger sightings in 2021-22, the highest number of sightings of the big cat since the use of camera traps. (Times of India, july-22). The 2023, six tiger sightings in Goa the forest department has said. The big cat has been spotted at the Wagati water hole at Surla, parts of Mollem, and at the Kalay Round Bhoma Beat. (Times of India, july-22).

Under the centrally sponsored plan scheme, Project Tiger, Goa was sanctioned Rs 21.5 lakh in 2017-18 for the fourth All India Tiger Estimation. (Times of India, july-22). The total expenditure incurred for the estimation programme was Rs 8.27 lakh. Under the state scheme, Protection of Tigers, the total amount of allocation for 2022-23 is Rs 50 lakh. (Times of India, july-22). A supplementary demand for additional grant of Rs 38.7 lakh has been placed. (Times of India, july-22).

Over the years, tigers have been spotted in the Goa part of Western Ghats. Western Ghats or the Sahayadri hill is house of Bengal tigers. While it isn't confirmed how many resident tigers are there in the area and that is now a politically issue on an important corridor area for the movement of tigers. Once it is converted into a tiger reserve, it could lead to rise in tiger population and creating a safeguard for environment for breeding. Declaring a tiger reserve will also prevent human encroachment, disallow red category industry operation and provide access

to national and international funding for the upkeep of the tiger habitat as it also controversy towards local's livelihood.

3.5 Data Collection and Technological Usages

M-STrIPES (Monitoring System for tigers-intensive protection and ecological status) uses GPS (Global Positioning System) to geo tag photo evidence and survey information. The 2022 tiger census also involved development of innovative technology like automated segregation of camera trap photographs to species using artificial intelligence and neural network models.

The Compare fingerprints of tigers from their stripe patterns to count the number of individual tigers. This is unlike in the past, where merely droppings, pugmarks, and sightings were used by state forest officials to record tiger numbers. Spatial data was also used where individual tiger photo-captures were combined with spatial data on prey and habitat. The human survey also benefited to count the numbers they viewed.

3.6 Environmentalists Demands: Declare A Tiger Reserve in Goa

The issue came into the limelight when a tigress and three cubs were found dead because of alleged poisoning in January 2020. A case goes such as the Dhangar community of Sattari taluka, killed a tigress and three cubs by spreading poisons on dead buffalo and placed into the forest. The next day the villagers in the early morning visited the small temple named Siddeshwar temple also called Siddha to celebrate Bhagot festival, people saw the dead tigers and their nails were absent. One of the tiger seen buried into the soil. The villagers informed forest department and news spread whole wide. The forest department restricted the forest dwellers to enter into the forest areas. As permissions from forest department needed to enter into forest area for their daily livelihood. Now, the situation is controlled. The NGO, Goa Foundation moved the case to the High Court, citing that there were no responses from the State government of Goa. In July

2023, the High Court of Bombay at Goa directed the State government to declare Mhadei Wildlife Sanctuary and surrounded areas as a Tiger Reserve within three months.

In 94-page order, on July 24, the division bench of Justices M.S. Sonak and Bharat Deshpande the Bombay High Court directed the Goa government several directions, including the preparation of a tiger conservation plan as per the Wildlife Protection Act, 1972, and submitting the same to the National Tiger Conservation Authority (NTCA) within the given time-frame. It also including setting up anti-poaching camps, and settling the claims of forest dwellers rights. The Goa government had approached the Supreme Court to nullify the order of the High Court. However, on September 25, 2023, the Apex Court refused to stay the High Court order and issued notices to the Goa Foundation, Ministry of Environment and Forest and Climate Change (MoEF&CC), National Tiger Conservation Authority (NTCA), Goa State Board for Wildlife, Goa Forest Department, and the Chief Wildlife Warden. On the contrary, the government has remained opposed to it, claiming that the decision will lead to a conflict of interest between the forest dwellers and the advocates of conservation.

An incident of tiger deaths in Goa's Mhadei Wildlife Sanctuary in 2020 and concern over development activities affecting tiger movement around the Goa-Karnataka border, have revived the call for notifying a tiger reserve in Goa. Declaration of a tiger reserve will ensure improved monitoring and perhaps lead to an increase in tiger population, while bringing enhanced technical and financial support from the National Tiger Conservation Authority (NTCA).

Incidents of tiger deaths in Mhadei Wildlife Sanctuary in Goa, in 2020, was a trigger for environmentalists to refresh their long-pending demand for a tiger reserve in the coastal state.

The case of Goa and Karnataka, are in conflict over the sharing of the Mhadei river water also impacted the tiger reserve in Goa.

Environmental activists and tiger enthusiast Rajendra P. Kerkar, who, since the late 90s, has been advocating for a dedicated tiger habitat in Goa, says any kind of infrastructure development activity in the area will disturb the ecosystem where tigers roam. Kerkar, formerly working with the Bombay Natural History Society, is still advocating for the protection of tigers in the Western Ghats of Goa. The Ghats cover on the eastern side and include the Mhadei Wildlife Sanctuary, Bhagwan Mahavir National Park and Wildlife Sanctuary, Netravali Wildlife Sanctuary and Cotigao Wildlife Sanctuary. According to Kerkar, there is no minimum base population required to declare an area as a tiger reserve. He says even without the presence of any wild cat, a region can be marked as a tiger reserve if it can serve as a natural habitat, with sufficient prey base, for tigers. Kerkar suggests that the forest rights claims being settled, the state government should proceed with areas which have no forest rights under section 26A of the Wildlife Protection Act, 1972, along with four villages, Anjunem, Gullem, Kelawade and Ponsule where people have already been rehabilitated due to the Anjunem dam and two more villages—Zadani and Pendral which have zero rights settlement. The government can start with these areas. The remaining areas can be added after the forest rights claims are settled he advises. (Praveena Sharma, 2023).

Richard D'Souza, the former Principal Chief Conservator of Forests who played a crucial role in designating Mhadei and Netravali as wildlife sanctuaries in the late 1990s, had the possibility of declaring the area a tiger reserve. But decided to control due to the resistance from the industries and certain sections of the government. In 2020, a tigress and three young adults were found dead in the Mhadei Wildlife Sanctuary. An investigation by wildlife and forest officials from Maharashtra, Karnataka and Goa revealed that the deaths were due to poisoning. A report

authored by a member of the investigating team, Rajendra G. Garawad, Assistant Inspector General of Forests, National Tiger Conservation Authority (NTCA), Bengaluru, clarify its recommendation of enhancing the legal status of Mhadei Wildlife Sanctuary to that of a tiger reserve. (Praveena Sharma, 2023).

D'Souza, on the other hand, suggests a more cohesive area be demarcated as tiger reserve. The core areas of Mhadei, Netravali and Mahavir wildlife sanctuaries can be put together as the Sahyadri Tiger Reserve, as Tigers are everywhere, across the Western Ghats.

Saurabh Kumar, Chief Conservator of Forests (Administration, Wildlife and Ecotourism), Goa Forest Department, admits there is a need to expedite the forest rights claims settlements to speed up the final notification of the two wildlife sanctuaries set up in 1999, and thereafter declaration of a tiger reserve in the region. He informs that more than 50 percent of the claims are almost settled and the remaining 50 percent are held up because of the extensive scrutiny required to clear them. (Praveena Sharma, 2023).

The forest department's note, which has been mentioned in the judgment of High Court, 2023, says the core zone was demarcated keeping the main villages and human habitation outside it and placing them in the proposed buffer zone as far as possible. There are a few isolated hutments in the core area, which may be shifted out. The removal of human habitations has not been mandated in the buffer zone.

Pratima Coutinho of the Save Mhadei Save Goa Front, stated that “how thousands of people who occupied the land where the greenfield Manohar International Airport was developed at Mopa in North Goa had been compensated and rehabilitated. Similarly, those affected by the tiger project could also be rehabilitated.” (Outlook,2023).

Rajan Ghate, another activist, claimed that Sawant himself had said in 2020 that Mhadei Wildlife Sanctuary should be declared as a tiger reserve. Environmentalist Rajendra Kerkar said the decision of the wildlife board was condemnable. “We have witnessed how the forests of Goa were burnt, purposely, by setting them on fire. If this stand continues, it will be difficult for the state,” he said. (Outlook,2023).

3.7 Letter from Union Environment and Forest Ministry

In June 2011, then Union environment and forests minister Jairam Ramesh had written to Digambar Kamat, then chief minister of Goa, requesting that the Mhadei sanctuary be turned into a tiger reserve. In his letter, Ramesh stated: “There is evidence that tigers in Goa are not merely transient animals but a resident population. Mhadei is a contiguous tiger landscape to the Bhimgad Wildlife Sanctuary in Karnataka to its south-east and to the Anshi Dandeli Tiger Reserve to its south, which has tigers.” (O Herald,2023).

In a study carried out in 2008, the Wildlife Institute of India had pointed out that the protected areas of Goa and their contiguous forests in Karnataka and Maharashtra are possibly some of the best potential tiger habitats in the Western Ghats and in need of protection,” Ramesh’s letter added.

In March 2016, the NTCA wrote to the principal chief conservator of forests (wildlife) and chief wildlife warden, Goa, about notifying the Cotigao-Mhadei forest complex as a tiger reserve.

3.8 Goa Government Response on Tiger’s Presence

The Goa bench of the Bombay HC gave the directive on a public interest litigation (PIL) filed by the Goa Foundation, an environmental action group. However, the state government is planning to challenge the order in the Supreme Court. Lawmakers from the ruling BJP (Bharatiya Janata Party) have claimed that the notification of the habitat as a tiger project will affect thousands of

people living in the area. The state government said there are no tigers in Goa. (Gauree Malkarnekar,2023).

The Centre's report comes as a problem to the state government, especially the forest minister Vishwajit Rane and Poriem MLA Deviya, who insisted on the floor of the House that there are no tigers in Goa. The Ranes had argued that Goa's forests are only a corridor for tigers. However, the 2018 and 2022 tiger censuses have made use of camera traps and other advanced technology that provide as a strong proof. Deviya said in the Goa assembly in 2023, “This area is just a corridor for tigers. A tiger may be sighted there only once in two or three years. The land for the tiger reserve in goa is too short will impact local’s livelihood. This does not make a tiger reserve, there should be need to rethink the high court order.” (Gauree Malkarnekar,2023).

Rajiv Gupta, the Principal Chief Conservator of Forests, Goa Forest Department, says that their department was studying whether the exercise for creation of a tiger reserve was worth undertaking. “If tigers are only migratory, it’s doesn’t make sense to have a tiger reserve. A sanctuary, a national park or a tiger reserve have the same level of protection. With a tiger reserve, only monitoring is improved because the Central Government will be directly involved and it will also attract better funds,”. (Mongabay India, 2023).

In court, the Goa government had said that the state was not opposed to notifying the area as a tiger reserve but that the time was not right to issue such a notification or even forward any proposal to the NTCA. Its stand was that further studies were necessary and that the rights of forest dwellers also needed to be settled before these steps were taken. In July 2023, the State Wildlife Board, which met under chief minister Dr. Pramod Sawant, rejected the idea of a tiger

reserve encompassing Mhadei as the proposal did not fit the criterion. Dr. Sawant said all conservation and protection norms were being complied with in the state's wildlife sanctuaries.

3.9 Conclusion

In summary, the situation regarding the declaration of a tiger reserve in Goa is complicated. On one side, environmentalists and evidence suggest that protecting tiger habitats is crucial, especially after incidents like the poisoning of a tigress and her cubs. They argue that declaring the Mhadei Wildlife Sanctuary as a tiger reserve would help conserve these animals. However, the government is hesitant. They worry about potential conflicts with local people's lives, the need for more studies, and settling the rights of those living in forests. Finding a middle ground is important, balancing conservation with the needs of local communities. This might involve more studies, fair compensation for affected people, and open discussions among everyone involved. Overall, declaring a tiger reserve in Goa could be crucial for protecting wildlife and showing a commitment to conservation and sustainable development.

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Chapter - IV

CASE STUDY ON FOREST DWELLERS OF MHADEI WILDLIFE SANCTUARY

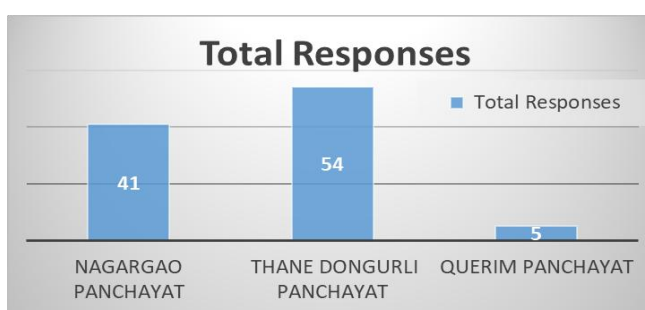
4.1 Introduction

The chapter focuses on data analysis to examine the respondents' opinions regarding the Case Study on Forest Dwellers of Mhadei Wildlife Sanctuary. A structured questionnaire was used to collect the data, with a total of one hundred respondent samples utilized in the field study. The areas covered within the Mhadei Wildlife Sanctuary include Nagargao Panchayat and Donguli Thane Panchayat. There were very few responses included from Querim Panchayat, as it is nearby to Mhadei Wildlife Sanctuary of Sattari taluka.

4.2 Demographic Information

The demographic profile covers the age, gender and occupations of the respondents conducted through field survey in and around Mhadei wildlife sanctuary.

4.2.1 Total Responses

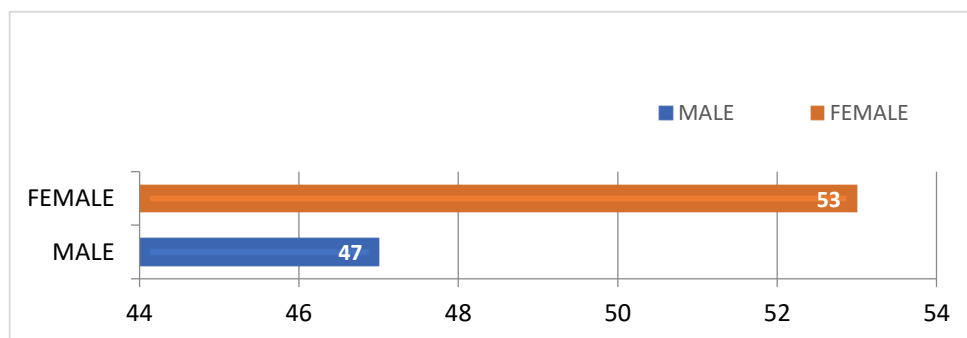


Source: Figure 4.1, collected data from field survey

The above bar graph depicts about that the three Panchayats were interviewed through the field survey, where total hundred responses from Nargargao Panchayat with 41 respondents,

54 respondents from Thane Dongurli Panchayat and only five respondents from Querim Panchayat which covers five different wards of Querim as Goteli 1, Goteli 2, Rane wado, Bhailo wado, Chovtura wado.

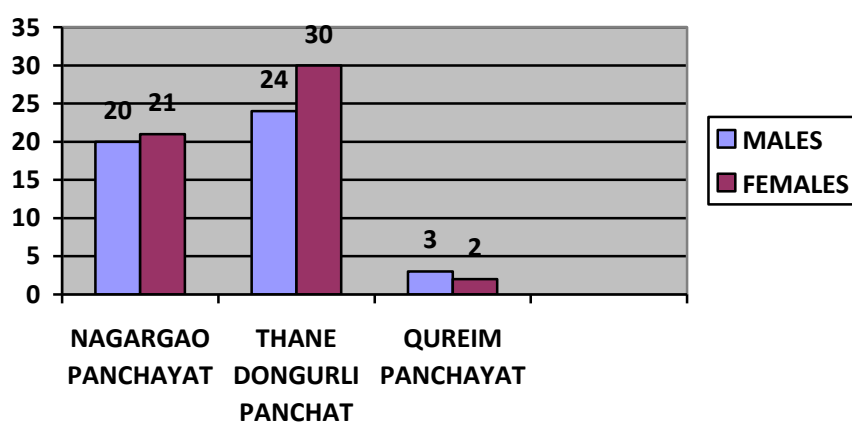
4.2.2 Gender of the Respondents



Source: Figure 4.2, collected data from field survey

The above bar graph depicts the gender of respondents. Majority of them are female with 53 percent and males with 47 percent. Total hundred responses were interviewed.

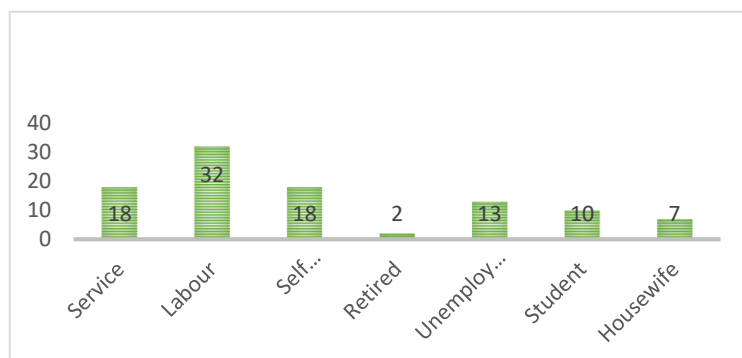
4.2.3 Village wise gender of the Respondents



Source: Figure 4.3, collected data from field survey

The above chart shows the village wise responses of the males and females. The Nagargao Panchayat and Thane Dongruli Panchayat with more females compare to males with 21 ,20 and 30,24 respectively. Whereas the Querim Panchayat with three males and two females.

4.2.4 Occupation of the Respondents

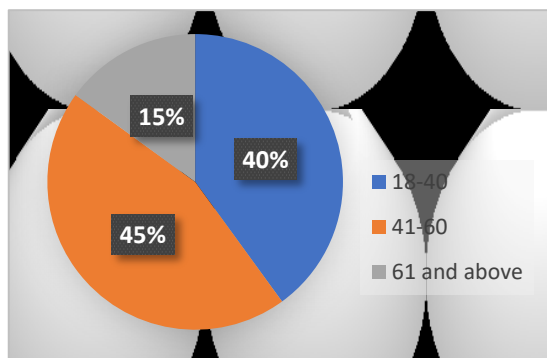


Source: Figure 4.4, collected data from field survey

The above bar graph illustrates the occupations of the respondents. The majority, accounting for 32 percent, work as labour occupations. Totaling around 18 percent are employed in the service sector and self-employed respectively. Those respondents who couldn't able to find job are 13 percent, unemployed, which needed to be focus as respondent's family were very active in their own cultivable land which satisfy their basic needs but poor condition made them lack on investment on property or other valuable materials and for an education, which make them rely on loans for situation in emergency as lack education didn't provide wealthier jobs. This groups are also above sixty years but willing to get labour or other personal jobs. A small portion, 7 percent, reported being a housewife. Women do collaborate with their husband to work in cultivation farms and in dairy which is source of income for them. Students, comprising 10

percent, were also interviewed. Only two respondents were found to be retired from a government job who worked in forest department.

4.2.5 Age of the Respondents



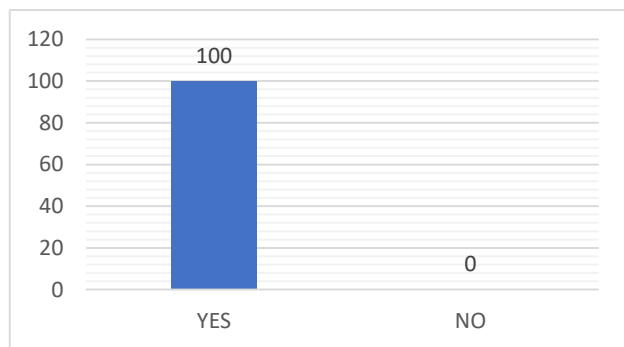
Source: Figure 4.5, The collected data from field survey

The pie chart above illustrates the distribution of respondents by age group. The majority fall within the 41 to 60 years' category, comprising 45 percent of the total. The least represented age group is 61 and above, accounting for only 15 percent of responses. Additionally, over a quarter of respondents, constituting 40 percent, belong to the age group of 18 to 40 years.

4.3 Awareness on Wildlife Protection

The data covered several aspects regarding the Mhadei Wildlife Sanctuary in Goa. Firstly, it examined the frequency with which respondents perceive the sanctuary to protect both animals and the rights of forest dwellers efficiently. Secondly, it assessed respondents' knowledge regarding the presence of tigers in the sanctuary. Thirdly, it explored whether villagers support the establishment of a tiger reserve in their area. Lastly, it investigated the effects on villagers of the sanctuary.

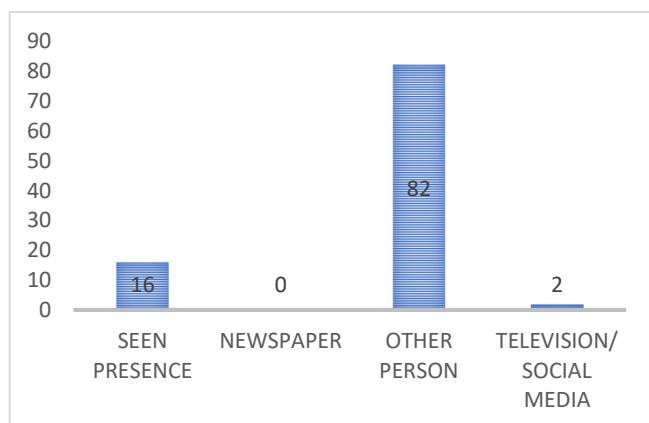
4.3.1 Function of Forest Department in Mhadei Wildlife Sanctuary



Source: Figure 4.6 the collected data from field survey

The above bar graph shows respondents are satisfied on functioning of forest department of Sattari Taluka, which includes protection of forest dwellers rights and protecting wild animals and plants. All the respondents are satisfying with services provided such as catching of wild animals as snakes, leopards etc. from entering into houses of respondents and also conducting awareness programme to save wildlife and its habitats which they do involve the youths of the villages by the forest department in the Mhadei Wildlife Sanctuary in Goa. But the lack of awareness about the forest policies, schemes, provisions or acts among the villagers, as this are not informed by forest department or panchayat members to them.

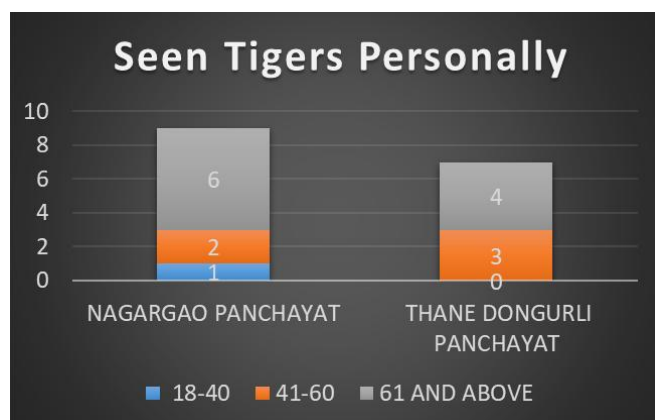
4.3.2 Presence of Tigers in Goa



Source: Figure 4.7, the collected data from field survey.

The graph above shows how villagers know about the presence of tigers in Mhadei Wildlife Sanctuary in Goa. Most, about 82 percent, heard about it from others. Only a small number, 2 percent, found out through media and newspapers. Additionally, 16 percent reported seeing tigers personally in the Mhadei Wildlife Sanctuary, Sattari. This suggests that there are indeed tigers in the forests of Goa.

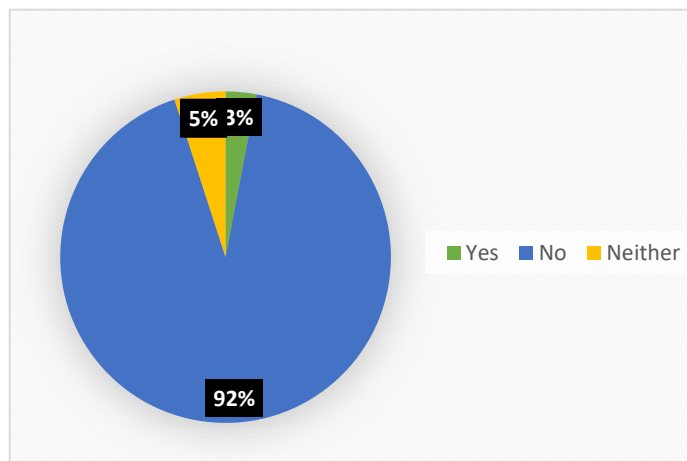
4.3.3 Seen Tigers Personally



Source: Figure 4.8, the collected data from field survey.

The above chart represents the in Nagargao residence six from age group 61 and above, two from 41-to 60 age group and only one seen from age group of 18 to 40. On the other hand, Thane Dongurli Panchayat none of them from age group of 18 to 40 have seen. The age group from 61 and above are four and age group of 41 to 60 have seen three of them. The age group 61 and above have seen tigers in their childhood.

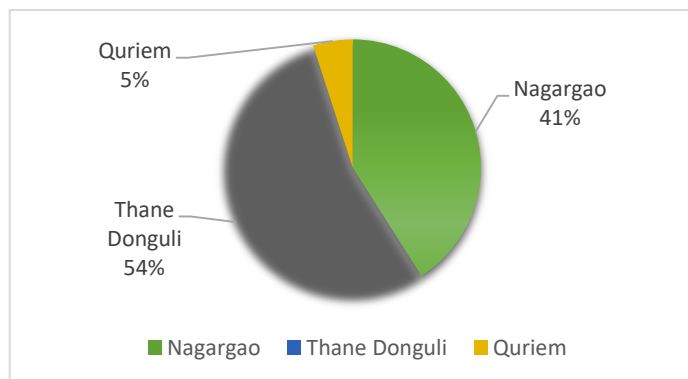
4.3.4 Support for Tiger Reserve in Goa



Source: Figure 4.9, the collected data from field survey

Based on the above bar graph, appears that only three percent of respondents support the establishment of a tiger reserve in Goa. This support is primarily from individuals working in service industries who are not reliant on forest resources for their daily livelihoods. Conversely, forest dwellers, who eagerly depend on forest resources. They fear losing their homes, traditions, and access to forest resources if the area is declared as tiger reserve, especially respondents who don't have their proper land settlement papers along with them. Surrounding communities also predicted negative impacts on their daily livelihoods on post-declaration, as access to the forest areas may be restricted. Additionally, a small percentage five percent of respondents prefer not to discuss the issue of the tiger reserve. As 92 percent villagers are deeply affecting if declare as tiger reserve in Goa. The respondents came to know about ongoing case on tiger reserve in Goa through a communication with other persons and social media.

4.3.5 Presence of Tiger in villages wise response



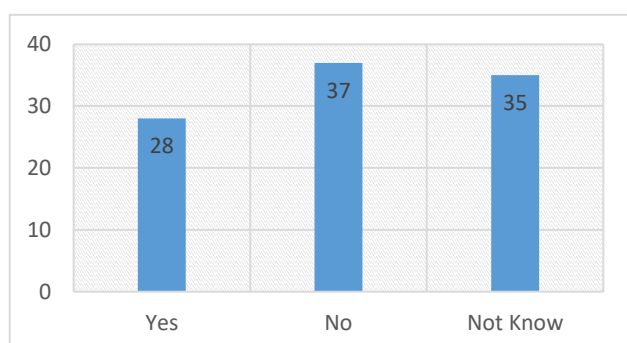
Source: Figure 4.10, the collected data from field survey

The above data depicts that the respondents have agreed on the existence of tigers in their villages and the surrounding areas. They believe in the presence of tigers in Mhadei Wildlife Sanctuary, Goa. Thane Donguli Panchayat respondents with 54 percent. Few respondents from Quriem with five percent and Nagargao with 41 percent. This totals to 100 percent, indicating that all respondents agreed with the tiger's visibility in Goa's forests.

4.4. Idea of Development in Goa

Development is not just about establishing industries and buildings. It means fulfilling the basic needs of the people in their daily lifestyles. The provisions of basic facilities that are needed to run life smoothly. The data collected from respondents will cover the basic facilities that are needed in the villages.

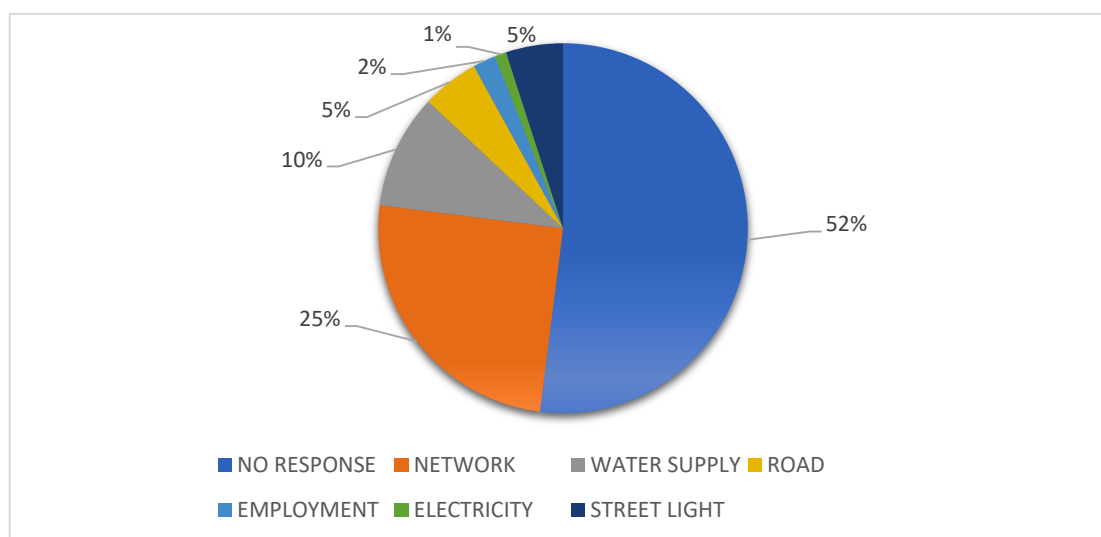
4.4.1 Need for Development



Source: Figure 4.11, the collected data from field survey

The graph above indicates that the majority, at 37 percent, feel that development is not required in their area. Around 35 percent did not provide a response, possibly because they believe all necessary facilities are already available in their village. A minority, comprising 28 percent, expressed a need for development in their village. Further analysis will reveal the specific types of development needed in these villages.

4.4.2 Types of Development Needed

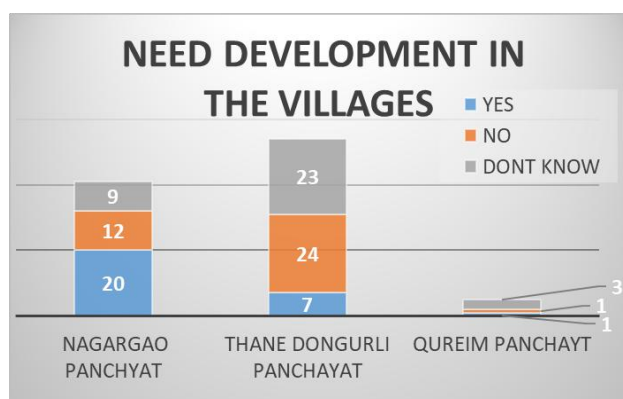


Source: Figure 4.12, the collected data from field survey

The pie chart above illustrates the types of development needed in the village. The respondents who not responded are 52 percent are satisfy with all need and no changes needed in near come future. The respondents with 25 percent, highlighted the necessity to address network issues within their locality. A very small percentage, just two percent, emphasized the need for employment opportunities, this may due to respondents have their own cultivation lands which make them satisfied for living. Around, five percent of villagers emphasized the necessity for

better road infrastructure due to potholes and inadequate construction. A concern raised by five percent of respondents was the need for street lights, particularly in areas of the Mhadei Wildlife Sanctuary with significant daily movement. Some areas have already initiated work in this regard. Furthermore, 10 percent of responses emphasized the urgency of improving water supply. Currently, there is a lack of tap water or wells, with water tankers arriving every three days. In areas where tap water is available, it runs for only an hour at a slow pace, making it difficult for villagers to meet their daily water for needs. Only one percent shown up with daily electricity power. The respondents also demand to the bus connectivity in to their areas for those students and workers who don't own bikes. Respondents prefer to have small developments changes that fulfill their basic needs rather than big infrastructures projects in to their areas.

4.4.3 Need development in Village wise



Source: Figure 4.13, the collected data from field survey

In the above charts shows, the Nargargao respondents majority of 20 needed development in their village where as Thane Dongurli only seven and Qureim only one. The respondents with no or don't know are not needed development as they are satisfying with their basic needs of life.

This shows most of the covered areas respondents are doing well in their daily life and no issues related to any developments

4.5 Respondents Views

It is answered by respondent's base on their experience, understanding and knowledge they peruse through the various sources. The study of three panchayats with its issues and responses by the respondents.

4.5.1 Nagargao Panchayat

The village covers Bambar, Nanoda, Godal, Sattee, Devrode, and Mololi, which are within the forested areas. For my survey, I considered responses from Maloli village, as it is close to the office of the Mhadei Wildlife Sanctuary within forested regions. The residents displayed high energy and politeness in their nature. Due to a lack of formal education, they tend to trust easily on information provided by others. Their lifestyle is simple, and they primarily seek the protection of their land and cultivation for themselves and future generations.

People living in Nagargao are not dependent on the Mhadei River, as some claim that it dries up slightly during the months of April and May. Instead, they rely on a well-constructed by the government twenty-five years ago. Respondents noted that Panch members are less educated and do not support discussions or take suggestions from villagers. While forest officers work efficiently, but, they tend to step back when it comes to protecting the fruit trees of poor farmers from wild animals. The respondents believe that there is no need for further development except for addressing water scarcity during summer and resolving network issues. Otherwise, they are content with their living conditions.

According to the older villagers, they saw many tigers in the forest during their childhood, but now tigers occasionally come to prey in Goa from Karnataka. While respondents express a desire to protect tigers, they do not support the establishment of a tiger reserve in their area due to concerns about restricted movement and potential loss of land and homes. They suggest locating the reserve elsewhere if it is necessary.

The government has installed fencing along the forest boundary, but it is ineffective as tigers can jump higher than it, posing a danger to locals. Forest fires in Nagargao have resulted in significant crop losses. Many farmers have abandoned paddy cultivation and switched to the dairy business due to obstacles like pigs, leopards, peacocks, gaurs, and monkeys destroying coconut, areca nut, and cashew plantations. Additionally, rice cultivation has reduced due to challenges in protecting crops from wild animals. While the Prime Minister's free rice distribution scheme has helped villagers, they are dissatisfied with the quality of rice provided.

One villager suggested diverting water from the Krishna River in Devgao to Nagargao for daily use. Water shortages were experienced this year due to lack of rainfall, but the water from the Anjuem dam has improved people's lives. However, some areas still face water scarcity, necessitating water tankers from Valpoi. They do get water from well-constructed years ago.

The government jobs provide employment and earning for just sixty years and advocating for working in the field and engaging in eco-friendly activities on private and forest lands after retirement. So, it's a need for safeguarding cultivable and forest lands. They value forest land for its fresh air, freedom of movement, and proper garbage management, contrasting it with the struggles of living in urban areas.

While the forest department engages youths and children in conservation activities. Major issues such as destruction of cultivation and land ownership remain unresolved despite numerous complaints. The installation of streetlights in Nagargao has exacerbated electricity issues. Some villagers are hesitant to discuss the presence of tigers in Goa, and many have heard about the ongoing process of declaring the Mhadei Wildlife Sanctuary as a Tiger Reserve through social media or newspapers.

4.5.2 Thane Dongurli Panchayat

The area near Vageri hill and Chorla Ghat faces conflicting opinions regarding forest destruction. While some believe that construction of roads and streetlights contributes to deforestation, others said that forest areas are adequately maintained despite using forest materials. Tigers are infrequently seen in the area, primarily using the Mhadei Wildlife Sanctuary as a corridor. However, there is only one health center and primary school in the village, villagers relying on Valpoi for additional facilities.

4.5.2.a Rivem

Villagers in Rivem respondents express in survey the presence of tigers and forests for their livelihoods. However, they do not support the establishment of a tiger reserve, expressing concerns about potential restrictions and displacement. Residents are generally satisfied with their living conditions, except for water shortages, which are exacerbated by hot climates and dam projects. They get water through the water tank constructed at Golaulim, by the Goa government on “Jal Jeevan Mission: Har Ghar Jal” supply water to villages as Charavanem, Golaulim, Dongurli, Hivre and Rivem. The water gets filled through the Mhadei river. They are optimistic about ongoing infrastructure projects, including streetlight installation and road

construction, but face network issues and rely on specific SIM cards for communication like BSNL SIM.

4.5.2.b Dongurli

Residents of Dongurli express concerns about water scarcity and fear losing land due to a tiger reserve. They face challenges with water supply and network issues, relying on a panch member for water tanker deliveries into village. While some villagers are neutral on the tiger reserve, others oppose it due to fears of displacement and loss of livelihoods. Residents suggest improvements to roads and streetlights.

4.5.2.c Devuswada and Khurdh wada (Charavanem)

Issues in these areas primarily revolve around network problems. The expressing concerns about impacts on the villagers on declaring tiger reserve. They suggest improvements to street lighting for safer travel at night.

4.5.2.d Bhuduk wada (Hirvem)

Water scarcity is a significant concern, exacerbated by dependence on electricity for water supply. Villagers face challenges with transportation and network issues. While some villagers oppose the tiger reserve due to land ownership issues, others advocate for eco-friendly industrial development.

4.5.2.e Paltan wado (Golaulim)

Issues with road construction and water supply are prevalent in Paltanwado. Villagers experience water scarcity and unreliable bus services, with only one hour of water supply available without electricity. Network issues persist, impacting communication.

4.5.2.f Jambliche Temb (Pali- Thanem)

While water supply is absent in Jambliche Temb specially in Dhangar wado, residents face challenges with water pressure due to damaged pipelines. Network issues persist, affecting communication. Villagers recall historical settlement on Vageri hills which now settled on the down foot of the mountain.

4.5.3 Qureim Panchayat

Qureim Panchayat includes wards such as Goteli, Rane wado, Muslim wada, Majik wada, Gawas wada, Majik wada, Parsekar wada, Chovtura wada, Halid wada, Bhailo wado. Very few responses from Qureim village among mention wada's were included in my paper. The village is well-developed with proper houses and all basic facilities available. It is located close to Vageri hill and Chorla Ghat but does not fall under the jurisdiction of the Mhadei Wildlife Sanctuary. However, some wards face challenges with drinking water quality, as muddy water with inadequate filtration comes through taps. Consequently, some residents resort to using well water near the Ajoba temple.

The primary livelihood in the village revolves around sugarcane and cashew plantation work, which satisfies the residents' needs. Despite the absence of frequent wild animal attacks, villagers mention the presence of tigers that come at night to drink water from the mountains. Issues with street lights are reported, as they are installed but not functional. Additionally, monkeys are noted for destroying vegetables and cashew crops, posing a challenge to agricultural activities. In some wards of Qureim, has poor road maintains as only single road and that to be narrow. During rainy the grass beside roads are not chopped off.

4.6 Conclusion

The data analysis provides valuable insights into the demographics, knowledge on wildlife protection, development needs, and local perspectives of villages surrounding the Mhadei Wildlife Sanctuary in Goa. Majority of respondents, particularly those reliant on forest resources, oppose the establishment of a tiger reserve due to concerns of displacement and loss of livelihoods. Water scarcity, network issues, and infrastructure development are common concerns across villages. Understanding these perspectives is crucial for sustainable conservation efforts and targeted development initiatives in the region. Women do engage financial support for family.

Chapter -V

CONCLUSION, FINDINGS AND SUGGESTIONS

The Tigers are big cats with orange fur and black stripes. They're the largest wild cats and are famous for their strength and beauty. But many tigers are endangered, so protecting them is really important. Tigers play a crucial role in maintaining the health and balance of their ecosystems. As top predators, they help to control the population of prey species, which in turn affects the vegetation and other animals in the area. Additionally, tigers are an important cultural symbol in many societies and play a significant role in tourism, generating income for local communities.

Forests are important because they give us oxygen, clean the air, and help fight climate change by storing carbon. They are homes to many animals and plants, including some that are unique and rare. People who live in forests, like indigenous communities, know how to take care of them without harming the environment. Forests also provide food, medicine, and jobs for many people. So, protecting forests is really needed.

Development can help protect forests and tigers if done rightly, like using sustainable practices and promoting eco-tourism. But, if development is not planned well, it can harm forests by causing deforestation, poaching, expanding cultivation activities, and habitat loss. This can make life difficult for tigers and other animals, as well as for forest dwellers. So, it's important to balance development with conservation to keep forests healthy and save tigers.

International organizations such as IUCN (International Union for Conservation of Nature), World Wildlife Fund, Global Tiger Forum, and Wildlife Conservation Society are working for

the betterment of nature and tiger protection. In India, Forest Acts and Forest policies have made a drastic change in afforestation and came with the Wildlife Protection Act in 1972, to protect from illegal poaching and trade of wild animals. The initiative idea of the Tiger Project under the National Tiger Conservation Act provides safeguards to tigers and their habitat.

Goa is the smallest state with a coastal and western Ghats region, a major tourist destination. The Western Ghats, also known as the Sahyadri hills, with distinct flora and fauna, provide balance in the ecosystem. The India National animal tiger is also found in the area, as Goa's forests, from Mhadei Wildlife Sanctuary in the north to Cotigao Wildlife Sanctuary to the south, serve as the main corridor for tiger movement. Many people from the past have seen tigers on a day-to-day basis, but sightings have become less frequent now.

The demand of environmentalists to convert the Mhadei Wildlife Sanctuary and surrounding areas into a tiger reserve aims to safeguard tigers from forest dwellers and prevent government misuse of forest land in the future. Additionally, it aims to protect Mhadei, also called Mandovi river, from diversion to Karnataka by the construction of dams. However, the Goa government opposes the proposal, believing that Goa is too small to declare a tiger reserve, and it will impact forest dwellers and villagers.

The survey conducted on people living in Mhadei Wildlife Sanctuary opposes the tiger reserve, as they need freedom of movement and want to have land settlement rights before the declaration of a tiger reserve in Goa. Mhadei wildlife sanctuary is bounded area only on documents but not on the field so, it will take a longer period of time for the procedures.

When it comes to development in the area, the villagers are sufficient enough to fulfill their basic needs. Only some minor issues need to be tackled in the summer season, such as water issues.

Other issues in certain villages include street lights, unemployment, road construction, buses, and network connectivity. Other than this, people live their lives very flexibly and are satisfied. There is harmony among villagers, and all traditionally and culturally celebrate village festivals together. In terms of occupation, at least one of the family member is at good post in private or government sector, they are well settled, and own cultivable lands and depended on forest for daily income. Women engage in rural household works and also in service and labor.

My field study provide a basic idea of what people think when the topic of a tiger reserve arises in Mhadei Wildlife Sanctuary. It is also seen that no one wants to talk about the topic due to fear of losing their livelihood or land and house. This study also provided the development facilities needed in particular villages, which need to be solved. As the study also shows, the forest department works at their best level to make people, forest, and wildlife safe from any danger. The positive response from villagers towards the forest department is a good indication. But sometimes they do feel the forest department rules as bossy.

The only thing that made me undertake the tiger case study under Mhadei Wildlife Sanctuary is that it is one of the biggest ongoing discussions between the Goa government and environmentalists in the Supreme Court, which has made national news. This study provided me with an understanding of the government, environmentalists, and people's perceptions on the topic I chose. This is a very sensitive topic where the people's emotions are attached.

It clearly depicts that forest dwellers are against tiger reserve as it will impact on livelihood on villagers residing in the area along with government. Goa government not support tiger reserve because the forest areas are too small to make it buffer or core areas and it also impact on forest dwellers and on surrounded villagers. According to them tigers are just use forest areas for

movement and not a settlers of the area. As respondents proclaim, the ministers do have their lands and cashew plantations in Mhadei Wildlife Sanctuary, as they are against for Tiger reserve. Controversial, civil society will not impact on declaration of tiger reserve in Goa, but those staying in north of Goa will face impact of water crises due to construction of Kalsa- Banduri nala dam project, which only tiger reserve can stop the construction. So, civil society support tiger reserve as same as environmentalist's ideas, they do need the forest and its rivers to be preserve. According to environmentalists and save Mhadei protesters it's important to safeguard rivers and forest greenery from any construction in and around Mhadei Wildlife Sanctuary and surrounded areas, which can lead in future due to increase of tourism in Goa.

The behavior of the people during the survey was very cooperative when the questions were based on development. But it was uncomfortable to answer them about the tiger reserve. All were very active in discussion and free-minded. Respondents were very kind to offering me water. As it also seems, there were fewer educated youth and no educated old respondents but well experienced with knowledgeable to current news. Some suggestions were given by respondents as follows:

- According to respondents, there should be proper marking boundaries on the ground in Mhadei Wildlife Sanctuary.
- People should get their land settlement papers so they can live there with proper rights.
- Tiger reserve will provide restrictions for daily workers and labor movements, so they do not support the tiger reserve.
- Panchayats and the Forest department should create more awareness regarding the schemes and policies through door-to-door communication.

- With less development strategy, create eco-friendlier cultivations and facilities in villages.
- Panch members should work hard to win the trust of the people. At least conduct meetings to provide updates regarding development activities.
- Panchayats should generate more employment opportunities, especially for life skills.

The dissertation mention about the acts and organization to protect wildlife and its habitats. The tiger is treated as power and national animal of India which are protected by NTCA in India as it is balancing our ecosystem.

The ongoing case by Goa government and Environmentalists to declare tiger reserve in Mhadei Wildlife Sanctuary in Sattari taluka in north Goa and its surrounded areas. The hundred responses from villager's residence of Mhadei Wildlife Sanctuary through field survey covering two major panchayats villages within forest areas and surrounded area. The standard questionnaire was based on development needed into their area and do they support tiger reserve in Goa and the effects they will had to face if Goa forests declare the tiger reserve.

The dissertation highlights the case of tiger killing in 2020 was major reason for above discussion. The news spread at national level which made rise in communication in Goa media and citizens. Further, the chapter three and four proving my hypothesis correct which mentions that declaration of Tiger Reserve is seen as guarantee to protect the forest areas from destruction under the cover of development, from the main effect of mining in Bicholim and Sattari taluka and Kalsa-Bandura Nala dam project by neighboring state Karnataka, the Mhadei river diversion around Mhadei Wildlife Sanctuary affect the livelihood and ecology of the areas. Secondly, the declaration of Tiger Reserve may negatively impact the people living in the areas within Mhadei Wildlife Sanctuary.

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APPENDIX- I

I Vrunda V. Kandolkar is the student of M.A. II, Political Science Programme, D.D. Kosambi School of Social Sciences and Behavioral Study (DDKSSSBS) Goa University. As part of our course for Semester IV, I have to write a Dissertation on topic " Dilemmas of Development: A Case Study of Tiger Reserve in Goa". As part of my dissertation work she needs to collect information from locals residing in and around Mhadei Wildlife Sanctuary of Sattari taluka, Goa. The standard questionnaire designed for this purpose. The respondent's identity will be kept strictly confidential. The responses collected are used only for academic purpose. Indeed, your active cooperation for making this study successful.

Section- A

Demographic Information

I agree to give my consent for the survey. (a) YES (b) NO

Q A) Gender: Male – 1 Female - 2

QB) Age:

1	18 - 40 years
2	41- 60 years
3	60 and above

QC) Occupation: 1-Service 2- Labor 3-Self Employed 4- Retired 5-Unemployed

6- Student 7- Housewife

QD) Residential Area (Specific Village/ Ward Name): _____

Section – B

Knowledge on Wildlife Protection

Q1) Do you believe that wildlife sanctuary in Goa is protected animals and forest dwellers rights efficiently?

1- Yes, why_____

2- No. why_____

Q2) Do you believe that the tigers are present in Goa?

1- Yes 2 – No

Q3) How you came to know the presence of tigers in Goa?

1- Seen it personally 2- Newspaper 3- Other person 4- Television and Social Media

Q4) Do you support tiger reserve in Goa?

1- Yes 2- No

Q5) If tiger reserve is declared, do it effects on your livelihood?

Ans: _____

Q6) Have you heard of case on going on tiger reserve in Goa? What is your view points on it?

1- Yes, _____

2- 2- No

Section – C**Idea of Development in Goa**

Q7) Do you need development in your village?

1- Yes 2- No

Q8) What type of development you feel needed in your village?

1- No Response 2- Network 3- Water Supply 4- Road 5- Employment
6- Electricity 7- Street Light

Q9) Do any development projects in your area will impact on your livelihood?

1- Yes 2- No

Q10) Any Suggestions you want to express?

Ans: _____

APPENDIX II





