



**Saving the Indian Tiger - A study on the effects of Wildlife
(Protection) Amendment Act 2006 and National Tiger
Conservation Authority**

A Research Paper presented by
Sreenivasan Narayanan
(India)

in partial fulfillment of the requirements for obtaining the degree of
MASTER OF ARTS IN DEVELOPMENT STUDIES

Major
Governance, Policy and Political Economy
(GPPE)

Specialization
Public Policy and Management (PPM)

Members of the Examining Committee:
Dr Joop de Wit
Dr Anirban Das Gupta

The Hague, The Netherlands
November 2014

Disclaimer:

This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

Inquiries :

Postal address :

Institute of Social Studies,
P.O. Box 297776
2502 LT The Hague
The Netherlands

Location

Kortenaerkade 12
2518 AX The Hague
The Netherlands

Telephone : +31 70 4260460

Fax : +31 70 426 0799

Acknowledgements

I thank Department of Personnel and Training, Ministry of Personnel, Grievances and Pensions, Government of India for deputing me for this study programme. I thank Dr Joop de Wit, my supervisor, for his active guidance, advice and suggestions in bringing out this paper. I also thank Dr Sylvia Bergh and Dr Anirban Das Gupta, my second supervisors for their valuable contributions and guidance.

I am grateful to my student discussant, Mr Dinesh Mahur for all his encouragement, in-depth feedback and support – especially in finalizing my theoretical and conceptual parts of my paper. I also thank other student discussants Mr Pratheep Purushothaman, Mr Dinesh Kumar, Mr Rakesh Sharma and Mrs Nandini Ghanekar for their feedback and assistance in preparing my paper.

My sincere thanks are due for Mr Alok Verma, my senior and mentor for his active moral support and inspiration throughout the study. I also thank Mr Subramaniam, Chief Conservator of Forests, Government of India for his motivation and guidance. I wish to express my gratitude to Dr Neeraj Shekar, Head, TRAFFIC India and Mr Sujoy Banerjee, former senior official of WWF for sharing their field experiences with me for the study.

I am grateful to Ms Belinda Wright, Executive Director of Wildlife Protection Society of India (WPSI) and Dr Ullas Karanth, Director, Wildlife Conservation Society (WCS) of India, for their quick, critical, in-depth and analytical opinions, despite their busy schedule, which enriched my study significantly adding considerable value.

I also wish to express my sincere thanks to Mr Rahul Pandey, Field Director of Nagarjuna Sagar Tiger Reserve, Mr Rajesh Gupta, former Field Director, Ranthambore Tiger Reserve, Mr Gokul, Field Director of Nagarhole Tiger Reserve, Mr H S Mohanta, former Deputy Director, Kanha Tiger Reserve, Mr Srinivasulu, Field Director, Dandeli Tiger Reserve, Mr Sanjayan, Deputy Director, Periyar Tiger Reserve and Mr C M Shivakumar, Assistant Inspector General, NTCA for sharing their experience and opinions, which were very helpful in accomplishing my research objective.

*Narayanan Sreenivasan
Chandigarh, India
12 November 2014*

Table of Contents

	<i>Page No.</i>
<i>Acknowledgements</i>	<i>iii</i>
<i>Table of Contents</i>	<i>iv</i>
<i>List of Tables</i>	<i>vi</i>
<i>List of Figures</i>	<i>vii</i>
<i>List of Acronyms</i>	<i>viii</i>
<i>Abstract and Key words</i>	<i>ix</i>
Chapter One: Introduction	1
1.1 Wildlife in India	1
1.2 Evolution of Wildlife Laws and Tiger Protection in India	2
1.2.1 Tiger Amendment 2006	3
1.3 Research Area, Relevance and Problem Statement	4
1.4 Research Objectives	6
1.5 Research Question	6
1.6 Research Methodology	7
1.7 Structure of the Paper	8
1.8 Risks and Limitations	8
Chapter Two: Concepts and Theoretical Framework	9
2.1 Concepts and Perspectives	9
2.1.1 Governance and Good Governance	9
2.1.2 Participatory Approach	10
2.1.3 Implementation	11
2.2 Framing of Concepts and Tools	12
Chapter Three: Conceptual Background of Tiger Protection - International and Indian Scenario	14
3.1 Tiger and its Distribution	14
3.2 Demand for Tiger Products – An Overview	17
3.3 Global Legislative Provisions for Tiger Protection	18
3.4 Legislation in India	19
3.5 Administration of Tiger Reserves	21
3.6 Non-Governmental Organizations	21
3.7 Man-Animal Conflicts – A Brief Overview	22

Chapter Four: National Tiger Conservation Authority	23
4.1 Project Tiger	23
4.2 Tiger Task Force and Amendment of Wildlife (Protection) Act 1972	24
4.3 Wildlife Crime Control Bureau	25
4.4 Constitution of NTCA	26
4.5 Organization Structure of NTCA	27
4.6 Functions of NTCA	27
4.7 Powers of NTCA	28
4.8 Budgetary Provisions	29
4.9 Current Activities of NTCA	29
4.10 NTCA – Strengths and Weaknesses	30
Chapter Five: Objectives, Approaches and Outcomes of NTCA	31
5.1 Mandated Duties of NTCA	31
5.2 Tiger Conservation Plans	32
5.3 Financial Assistance by NTCA to individual Tiger Reserves	34
5.4 Tourism	34
5.5 Managing Man-Animal Conflicts and Village Relocations	35
5.6 Tiger Conservation Foundations	35
5.7 Tiger Population/ Mortality / Poaching Cases	36
5.8 Capacity Building Programmes and Alerts / Advisories	37
Chapter Six: Theoretical Analysis and Discussion	39
6.1 Governance in Tiger Conservation	39
6.1.1 Governance Triangle	39
6.1.2 Discussion	43
6.2 Stakeholder Analysis	46
6.2.1 Stakeholder Analysis Table	47
6.2.2 Stakeholder Importance and Influence Matrix	48
6.3 Policy Evaluation	51
6.3.1 Conservation Assessed by Plans, Population, Funds and Area	52
6.3.2 Evaluating the Participatory Approach	54
Chapter Seven: Conclusions	57
References	61
Annexures (Tables)	70

List of Tables	Page No.	
Table 3.1	Tiger reserves and their areas	71
Table 4.1	Total population of tigers in India	24
Table 4.2	Budget Allocation of NTCA under the 12 th Plan (for years 2012-13 and 2013-14)	73
Table 5.1	Funds demanded, allotted and works that could not be carried out in some of the tiger reserves during 2001-05	33
Table 5.2	Financial assistance by NTCA to different tiger reserves during 11 th Plan	74
Table 5.3	Details of funds released to different tiger reserves for relocation of villages during 11 th Plan	76
Table 5.4	Details of tiger estimation for the year 2006 and 2010	77
Table 5.5	Tiger mortality from 1999 to 2014 (till May 14)	79
Table 5.6	Advisories and alerts Issued by NTCA and WCCB	80
Table 6.1	Tiger conservation governance on governance triangle	42
Table 6.2	Actor competencies in stages of tiger conservation strategies	45
Table 6.3	Relative importance of actors in different stages of tiger conservation strategies	45
Table 6.4	Stakeholder analysis table on Indian tiger conservation strategy	

List of Figures		Page No.
Figure 3.1	Map Showing Tiger Reserves in India	16
Figure 6.1	Governance Triangle of Tiger Conservation	41
Figure 6.2.1	Governance Triangle – Before 2006	44
Figure 6.2.2	Governance Triangle – After 2006	44
Figure 6.3	Stakeholder Influence / Importance Matrix of Tiger Conservation Strategy (2014)	49
Figure 6.4	Stakeholder Influence / Importance Matrix of Tiger Conservation Strategy (2005)	50

List of Acronyms

CAG	:	Comptroller and Auditor General of India
CITES	:	Convention on International Trade in Endangered Species of wild Fauna and Flora
EXIM	:	Export Import Policy
IBCN	:	International Bird Conservation Network
IUCN	:	International Union for Conservation of Nature
MoEF	:	Ministry of Environment and Forests
MoLJ	:	Ministry of Law and Justice
NBWL	:	National Board for Wild Life
NGO	:	Non-Governmental Organization
NTCA	:	National Tiger Conservation Authority
SBWL	:	State Board for Wild Life
TCM	:	Traditional Chinese Medicines
TCP	:	Tiger Conservation Plans
TRAFFIC	:	Trade Record Analysis of Flora and Fauna in Commerce
TTF	:	Tiger Task Force
UNDP	:	United Nations Development Programme
WCCB	:	Wildlife Crime Control Bureau
WCS	:	Wildlife Conservation Society
WLPA	:	Wildlife (Protection) Act, 1972
WPSI	:	Wildlife Protection Society of India
WTI	:	Wildlife Trust of India
WWF	:	World Wide Fund for Nature

Abstract

The fast dwindling population of tigers in India in the recent decades prompted the Government to take immediate steps to conserve them through special efforts. In 2005, the Tiger Task Force, appointed by Government of India stressed the need for establishment of a National Tiger Authority for streamlining the management and procedures adopted in the tiger reserves in the country. It stressed on participatory approach involving local communities in the conservation strategy to protect the Indian tigers. Consequently, in 2006, Government of India made an amendment in the Wildlife (Protection) Act, 1972 and National Tiger Conservation Authority (NTCA).

The high level authority, thus formed, adopted a number of measures including increasing the area of tiger reserves through relocation of villages, enhancing and regularizing the funds for conservation, devising protocols for streamlining the procedures and reducing the man-animal conflicts through prompt and adequate compensation. Our analysis of the functions of NTCA highlights that NTCA has considerably been successful in the areas of fund allocation and its utilization for conservation, ensuring approval of conservation plans and their implementation, arresting the loss of habitats and improving the habitat areas and in ensuring uniformity and objectivity in management and administration of tiger reserves. All these measures have also resulted in a convincing sustenance of tiger population in the country which is evident from the tiger census done in 2010.

However, the study reveals that a lot needs to be done in involving the local communities in the active conservation process through sharing of benefits obtained by tourism and conservation efforts. To give a real shape to the policy which envisages ensuring the agricultural, livelihood, development and other interests of the people living in a tiger reserve, a solid framework having an appropriate legal back up for sharing the benefit with local communities is necessary now. This alone can ensure a sustained and real participation process and prevent the wonderful animal from ending up with an 'ecological extinction' stage.

Key Words : *Tiger Protection, Conservation, National Tiger Protection Authority, Wildlife (Protection) Act, 1972, Wildlife (Protection) Amendment Act, 2006, Participatory approach.*

Saving the Indian Tiger - A study on the effects of Wildlife (Protection) Amendment Act 2006 and National Tiger Conservation Authority

Chapter 1 Introduction

*The tiger perishes without the forest,
And the forest perishes without its tigers.
Therefore the tiger should stand guard over the forest,
And the forest should protect all its tigers*

-Mahabharatha, the Indian Epic, 400 BC

1.1 Wildlife in India

India is one of the few countries in the world with a rich biodiversity and wildlife harbouring numerous species of wild fauna and flora in its vast forest and marine ecosystems. Though it is the source of almost all major wildlife in the world, there is no real demand for the wildlife and its products in India, except for petty meat purposes and religious/ornamental purposes, which form an insignificant part of the demand. Major demand for the wildlife articles, is from outside the country, especially for medicinal and pet purposes. Thus, a considerable rate of poaching of wildlife takes place to facilitate the illegal trade of wildlife articles, especially to cater the demand from outside the country (WPSI 2014a). Tigers, rhinoceros, leopards, elephants, star tortoises, snakes, pangolins and sea cucumber are some of the important wildlife which are having a huge demand in the international market and traded illegally. Tiger bones are used in making bone wine in traditional Chinese medicine and pelts are used in the manufacture of luxury furniture and decorative items (WPSI 2014b).

Section 48A of Constitution of India provides for the State to “endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country”. Under Sec 51 A (g) of the Constitution, it is the fundamental duty of all citizens to ‘protect and improve the natural environment including wildlife and to have compassion for living creatures’. The subject of wildlife falls under the concurrent list of Indian Constitution and therefore, the Central Government retains the ultimate authority in all policy matters in the subject over the State Governments, which are the

primary custodian of the forests and wildlife. Thus, the Indian Wildlife (Protection) Act, 1972 (WLPA) is the Central Act, being implemented in all Indian States. Enforcement is primarily looked after by the State agencies and wherever diversion, denotification and policy changes are required, the Central Government's prior approval is necessary.

1.2 Evolution of Wildlife Laws and Tiger Protection in India

Though the wildlife protection is practiced in India from historic and British periods, the Wildlife (Protection) Act, 1972, was the first important step towards wildlife protection. In 1973, Project Tiger Scheme was launched by the Government to protect the tiger population. It was the first major initiative towards protection of tigers. India became a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1976 and the trade on wildlife with other countries was regulated. CITES prohibits the trade of around 800 wild species and restricts the trade in around 23000 species (Nurse 2012:3). India also joined and endorsed important international conventions and treaties like Ramsar Convention (1971), The Convention on the Conservation of Migratory Species of Wild Animals, Bonn (1979, effective from 1983) and Convention between India and Soviet Union (1984) for protection of migratory birds (IBCN 2011).

The WLPA was **amended in 1982** to accommodate provisions for capture and relocation of animals. The **Act was amended again in 1986**, prohibiting the trade in wild animals listed under Schedule I and Part II of Schedule II, completely (Oak n.d.). A further **amendment was made in 1991** to address the need for checking the decline of wildlife in the country (ibid) and now complete ban on hunting of all wild animals was imposed with enhanced punishments (of prison terms and penalties). In **1993, minor changes** were brought in the Act with reference to recognition of zoos (MoEF 1993). Next came the **amendment in 2002**, with a shift of the Government from its exclusionary and non participatory approach to more participatory and community based approach (Kalpavriksh 2003). The National Board for Wildlife (NBWL) and State Wildlife Boards were reconstituted and the Prime Minister was the Chairman of NBWL with members including Minister of

Forests, Parliament Members, senior bureaucrats, experts from different government organizations and fifteen eminent members from the NGOs, conservationists and wildlife ecologists.

1.2.1 Tiger Amendment 2006

The important institutional framework was introduced with the crucial **amendment in 2006 in the Act**, which is also called the **Tiger Amendment** (Bijoy 2011:37). This amendment has a compelling and interesting background. In 2004, in Sariska Tiger Reserve of Indian State of Rajasthan, it was discovered that all tigers had vanished due to poaching. The Tiger Task Force (TTF) constituted by the Government, with five members from eminent NGOs and conservationists, found that institutional collapse and extreme hostility of local communities were main reasons for the poaching in the reserve (The Report of the TTF 2005:16-17). The report concluded that use of legal approach, boundaries and officials alone cannot protect the wildlife and a participatory approach with local communities who are sharing the habitats with the tigers is the need of the hour (Bijoy 2011:38). Thus, the committee insisted strongly on the need for reform with an inclusive approach for tiger conservation on a top priority basis (The Report of the TTF 2005:116), recommending,

- (i) the creation of a Tiger Authority with administrative autonomy reporting to the Parliament to augment its political commitment and setting up of the Wildlife Crime Bureau at the Central level and
- (ii) incorporation of inclusive approach in the conservation management urgently, involving the local communities and tribes (ibid:146-150)

Based on these recommendations, the **Government brought in the amendment urgently in 2006** and formed the **National Tiger Conservation Authority (NTCA)** with the Minister of Environment and Forests as Chairperson (MoEF 2006). And for a direct role in preventing the crimes, the Government established the Tiger and Other Endangered Species Crime Control Bureau to be known as **Wildlife Crime Control Bureau (WCCB)** with officers from different enforcement agencies in the country, in 2007, with a

special focus to prevent tiger poaching. The amendment also ***enhanced the punishments for the offences in the tiger reserve core area and relating to hunting in the tiger reserve*** to 3-7 years imprisonment along with Rs.50,000-2,00,000 fine and for subsequent convictions, 7 years and Rs.5,00,000-50,00,000 (MoEF 2006).

The Government's focus on tiger was a meaningful initiative since tiger is not just a charming animal but a unique predatory species which lies on the top of the food chain pyramid. It maintains the balance of herbivores and vegetation and for the existence of a tiger, a proper ecosystem has to be ensured. Alternatively, the presence of tiger simply indicates a healthy ecosystem. Tiger is distributed throughout the country and its protection requires sustained maintenance of the entire ecosystem. Therefore, the Government intentionally focused on tiger protection to have an effective protection of the entire wildlife.

1.3 Research Area, Relevance and Problem Statement

With India holding around 60% of the global tiger population (Seidensticker 2010:286), the case for protection of tiger species in India becomes much stronger and significant. Studies indicate that today's tiger population is less than 2% of the global population existed two centuries ago and India holds the crucial key to the survival and recovery of tigers globally, based on genetic, demographic and ecological factors (Mondol *et al* 2009).

The 2006 amendment assumes importance as it signifies the keenness of the Government to protect the tigers through new approach and institutional systems. Radical changes were brought about in the functions and roles of Central Government in the protection of tigers by introducing the important national level organization called NTCA which is mandated to develop the accountability of Union Government and States in the management of the Tiger Reserves through an appropriate base for Memorandum of Understanding with State Governments within the federal structure. It is also mandated to provide a vision to the Parliament besides keeping their priorities on the livelihood safety of the communities living in and around the tiger reserves (MoEF 2006).

However, it appears that the things have not moved smoothly, as it was expected. There are serious criticisms on the level of protection of tiger even today. The number of tigers, which were around 40000 at the end of 19th century had fallen drastically to less than 2000 in 1970s, which has come down to 1411 in 2011 (Bijoy 2011:36, Kahn 2008). These figures too are not accepted by eminent conservationists, who put the number to only between 1000 and 1200 (Thapar 2013). Even after all such apparently strong initiatives, we learn that in 2013 alone, 68 tigers were lost, which accounts to around 5% of the total population (The Hindu 2014). While observing the number of deaths in 2012 (89) as alarming, Menon (2012) indicates that the number of deaths in 2010 and 2011 too were 53 and 56.

There are strong criticisms about the participatory approach measures adopted in the protection. Bijoy (2011) claims that 'the same old stale wine' has been served in the new bottle and the regulations/procedures are not implemented in its right spirit in declaring critical tiger habitats. A study conducted by Kranth *et al* (2008) concluded that the recommendations of TTF (which had helped to bring back the country's attention to conservation needs and challenges) were sound but suspected the implementation of the same in the field. Now, 8 years after introducing the major institutional and legal changes in the system, it is time to examine whether the Government has succeeded in its protection efforts and is progressing in the desired direction.

Though it ***appears that*** the issues relating to tiger protection have largely been addressed by the Government's initiatives (while poaching cases are to be dealt by the new organization WCCB, compensations, community participation, relocation, habitat conservation and maintenance of a healthy ecosystem are to be addressed by NTCA), there are indications that the field level implementation of these measures may not be commensurate with the objectives. ***It is the urgent need of the hour to examine the efficacy of these initiatives introduced through establishment of NTCA, the apex body for tiger protection by 2006 amendment, as we are already down with less than 2000 wild tigers. Thus, a study on the level of protection of tigers, based on the tiger population, management, effect of the participatory approach adopted for conservation, implementation of different schemes***

and the fund utilization pattern by NTCA can give an assessment of status of tiger protection in the country.

As we observe, NTCA's main mandates aim at streamlining the administration and management of tiger reserves as per the Tiger Conservation Plans (TCP) approved, ensuring adequate fund disbursement, restricting diversion of reserve areas and increasing the habitat area through relocation of villages, regulating tourism activities, reducing the man-animal conflicts, increasing the capacity of the field staff and to carry out tiger reserve management through adopting people participation (MoEF 2006).

1.4 Research Objectives

1. To examine the effects of 2006 amendment, especially, the role of NTCA in tiger protection and the significance and success of different schemes, protocols and procedures adopted by NTCA in achieving its objectives to protect tigers in India.
2. To study the role of different stakeholders in the protection of tigers.
3. To understand the constraints and practical field level problems, if any, in implementing the policies and procedures of NTCA.
4. To suggest recommendations, if necessary.

Thus, the main objective of the study was to investigate, in an initial way, the effects and implications after the introduction of NTCA in 2006, to examine the gaps, if any, and to suggest the changes in policy, institutional framework and Act, if required.

1.5 Research Question

“How far have the objectives of Wildlife (Protection) Amendment Act, 2006 succeeded in protecting the tigers through the introduction of National Tiger Conservation Authority (NTCA)?”

The sub questions of the research are,

- (i) What was the contextual background of amendment of the Wildlife Act, and establishment of NTCA and what are the

mandates, structure and specific roles of NTCA in the protection of tigers?

- (ii) What are administrative protocols and conservation plans developed by NTCA in its strategy and how effective have they been in the field in terms of sustenance of tiger population?
- (iii) How far NTCA has achieved its objectives of increasing the habitat area through relocation of villages from tiger reserves, utilization of funds meant for conservation activities, resolution of man-animal conflicts through compensation and implementation of participatory conservation approach?
- (iv) What are the roles of different stakeholders like WCCB, State Governments, NGOs, communities, wildlife enthusiasts and conservationists in tiger protection and how far have they played their roles in the new scenario?

1.6 Research methodology

The study involved analysis of both quantitative and qualitative data on tiger population, number of tiger deaths and poaching cases collected mainly from the secondary sources. Policies, acts, amendments, action plans, reports of different committees, organizations and departments, objectives and mandates of organizations, budgetary allocation, targets assigned, goals achieved and utilization of funds through different schemes were examined. Secondary data from different published and unpublished materials, electronic media, books, journals, articles, newspapers, course materials and brochures were used. Websites of popular Non-Governmental Organizations and international wildlife organizations were also referred to get different views and criticisms on the policies introduced, practical constraints faced and extent of implementation of acts in the field and data on poaching.

Some primary data were collected from selected field officials of NTCA, NGOs and State Forest Departments through telephonic calls and mail contacts. This, in addition to the secondary data collected, provided a basis for the stakeholder analysis and analysis of the governance process. The relationship between the introduction of various initiatives, amendments and

institutions and the outcome measured in terms of tiger population reported through census was studied and an interpretation has been attempted.

1.7 Structure of the Paper

The paper contains the introductory part involving background and relevance of research in the first chapter. The second chapter describes the theoretical concepts and literature review on tiger protection; chapter three elaborates the context under which the topic is discussed, describing the international scenario on wildlife crimes, demand for tiger products, Indian context of tiger protection, significance of tiger conservation and its relevance to general wildlife, legislations, population, administration of tiger reserves in India and role of NGOs in tiger conservation. Fourth chapter gives a detailed note on NTCA, with the background of Project Tiger, Tiger Task Force, Wildlife (Protection) Amendment Act, 2006, establishment, constitution, structure, powers, functions, budgetary provisions and current activities of NTCA. Fifth chapter explains different approaches adopted by NTCA, its inputs and outcomes in terms of different indicators collected through various sources. Sixth chapter analyses the process of governance in tiger protection, role of different stakeholders and the evaluation of the new policy introduced by the amendment. Chapter seven concludes with results, observations and recommendations.

1.8 Risks and limitations

The work reviewed different government initiatives in the field of tiger protection in India and the data were collected mostly from the government reports. It was a tough task to access the base line data for analysis, from different sources. Another limitation was the assessment of the role of NGOs in the protection and conservation measures implemented. This was a subjective assessment as many of the background information and facts could not be objectively interpreted. Another limitation was that, I am a Forest Service Officer of Indian Government with 17 years of experience in the field, and it was a challenge to distance myself from the personal bias in the study, in which I have hopefully succeeded to a large extent.

Chapter 2

Concepts and Theoretical Framework

The most magnificent creature in the entire world, the tiger is

- Jack Hanna

The paper intends to study the status of protection of tigers in India after the amendment of WLPA in 2006 which introduced new approaches to conserve tigers, which were facing a definite threat. Thus, NTCA was established with representations from professionals and experts outside the government with specific objectives, powers and functions with an emphasis on participatory approach with the local communities in the protection strategy. The main concepts, theories and tools used in the study are presented here.

2.1 Concepts and Perspectives

2.1.1 Governance and Good Governance: Governance is a multi-stakeholder process involving State and non-State players which plays a major role in wildlife protection. World Bank (1994) indicates that good governance in public sector should have the aspects of **accountability, legal frame work for development and transparency**. United Nations Development Programme (UNDP 1997:4) defines good governance as “....among other things, **participatory, transparent and accountable**. It is also effective and equitable. It promotes the rule of law”. Thus, good governance can be referred to a process where the organization takes important decisions, identify the components and people involved in the process and how they are made accountable. In the context of **wildlife governance**, it includes conception of enforcement mechanisms to be adopted, monitoring and supervisory functions to be assigned, recognition of role of NGOs and conservationists in the policy making process and implementation of protection measures.

IUCN (n.d) defines governance as “the exercise of political authority and the use of institutional resources to manage society’s problems and affairs”. Governance, as a mechanism, refers to decision making processes through

defined set of institutional procedures, compliance and control of the same (Levi-Faur 2012:8). The changes in the governing methods through introduction of new policy, promulgating new act or amending the existing one also thus become part of the governance process. Colebatch (2009:10) refers policy as 'governance of a specific problem through appropriate measures'. Long (1989:241) indicates the process of policy transformation as a continuous one, resulting upon calculated and intentional interventions within the framework of specific organizations, political, cultural and social environment. The use of a separate wildlife policy is often undervalued with many developing countries either not having any policy at all or the policies in existence do little in practice and the policy can be a separate one or a part of the conservation strategy or an action plan also (McHenry 1994).

In administrative context, Leftwich (1993:611) defines good governance as "an efficient, open, accountable and audited public service which has the bureaucratic competence to help design and implement appropriate policies and manage whatever public sector there is". The need for examining the role and reactions of different stake holders in the process of implementation of policies has been emphasized by Long (1989:241) and accordingly, in our present study, the roles of various stakeholders in the implementation process have been studied. And the governance, in the context of introduction of a new policy, its implementation at field level through sets of institutional procedures and approaches has been analyzed.

2.1.2 Participatory Approach: Participatory approach is a process which lays its foundation on shared ownership in the process of decision making where the decision making process significantly depends with the professionals outside the State (VSO n.d.:7). Thus, it simply refers to an approach where everyone having a stake in the intervention has a right and say in the process and a true participatory approach considers everyone's perspective. When we examine the concept in the context of the management of natural resources, the process refers to the facilitation of dialogues between different stakeholders taking advantage of the local knowledge, skills, existing institutions and communities in managing the resources sustainably

maintaining the equity, social justice and cultural integrity (Renard and Krishnarayan 2000). The important part of developing an effective wildlife policy and its legislations lies with the theme of shifting the wildlife resource management authority from State to local communities (McHenry 1994). Participatory approaches need to look into the needs and resource priorities of different stakeholders and ensure the partnerships of the stakeholders in an equitable way in managing the resources (Badola 1999). Following the same principles, TTF (2005:22) clearly outlined the need for securing the future of tigers through involvement of local communities with mutual and collaborative framework for sharing the remunerations derived from the conservation efforts. The present study thus uses this concept to examine how far the same has been applied.

2.1.3 Implementation: Policy implementation is defined as “what happens between the establishment of an apparent intention on the part of the government to do something or to stop doing something and the ultimate impact in the world of action” (O’Toole 2000:266). Implementation is a difficult process and often beyond the process of meticulous planning and application of suitable techniques (Turner and Hulme 1997). Studies have shown that good policies have failed in the field since they have not included all the stakeholders in the process of implementation (Renard and Krishnarayan 2000). In case of wildlife policies, the implementation needs to take care of the existing customary laws and practices, the failure of which may have a significant impact on the wildlife resources and their management (McHenry 1994).

According to Grindle and Thomas (1991:121-124), in the linear model of policy process, the decisions carry significant role ignoring implementation part. However, the interactive model explains the implementation as the crucial one, interactive and continuous decision making process in response to the expected and unexpected responses from different stakeholders in the policy process (ibid:125). Such a model permits the assessment and source mobilization at different levels, according to the requirement of the situations

and will be suitable for our study to analyze the policy process involving different stakeholders in the implementation process.

2.2 Framing of Concepts and Tools

Applying the above concepts, the analysis on the status of tiger protection, its governance, participatory approach and policy implementation process has been done in this paper.

For studying the governance of tiger conservation and different actor groups who are the potential participants in regulatory governance, I have used the **governance triangle** given by Abott and Snidal (2009). This triangle provides the idea of various roles of multiple stakeholders in the potential space of wildlife conservation. The State, NGOs and local communities and the market players (tourism market and illegal wildlife article traders) are the key actor groups identified in the conservation strategy. Their roles, positions in the triangle and their mutual relationship in the governance process have been identified. The study examines the relative competencies and relative importance of individual group of actors at different stages of conservation strategy plan and compares their relative positions in the governance before and after the policy introduction.

A **stakeholder analysis** of all the individuals, groups, institutions and organizations which hold identifiable stakes in the implementation of the policy has been made in the study. Schmeer (1999:3) describes stakeholder analysis as the exercise involving systematic collection and analysis of information for weighing and considering the interest options in formulation and implementation of a policy/programme. The analysis intends to assess the design, preparation and policy implementation process and to study the scope for future efforts. The stakeholder analysis attempts to identify different key, primary and secondary stakeholders in the conservation strategy and to understand their interests, conflicts of interests among them, relationship between them and to assess their participation level at different stages of the implementation (Overseas Development Agency 1995).

After identifying the various stakeholders and their relative roles in conservation, a **stakeholder influence and importance** matrix has been drawn to know the level of risks associated with the policy and to have a clear idea on potential linkages in the future and to avoid the risk of more powerful stakeholders hijacking the programme to their advantage (ICRA, n.d:5). **Influence** indicates the power, the stakeholders command over a specific policy or programme to control the decisions which can facilitate or impede the implementation process (ibid). There are a number of variables like administrative or legal hierarchy, leadership authority, ability to control strategic resources, technical expertise and negotiation position, affect the relative influence of a stakeholder. By **importance**, we mean the priority accorded in the policy implementation process by the implementing agency in accomplishing the interests of the stakeholders (ibid).

An attempt to **evaluate the policy** and its outcomes has been made in the study. According to Dunn (1994:340), policy evaluation is the “production of information about the value and worth of the policy outcome” and it explains the differences that can be assessed after satisfying the needs, values and opportunities of a problem. Jann and Wegrich (2006) explain the policy process as a set of actions involving recognition of problems and issue selection, formulation of policy and decision making, implementation of policy and finally the evaluation and suggest that the policy evaluation can be performed at any stage of the policy cycle process applying the perspective to the process. Following the idea, a subjective policy evaluation has been done in the present study, with an analysis of the outcomes in terms of population of tigers, fund allocation, habitat area, systematic plans and participatory approach. An attempt has been made to evaluate the policy through assessment of these indicators, which highlights the assumptions, their credibility and the opinions of different stakeholders in the process. Applying the principles of interactive model of policy reform implementation of Grindle and Thomas (1991:128), an attempt is made to study the types of resources required to sustain the reform process and to understand the conflicts, if any, in implementation of the policy in the field.

Chapter 3

Contextual Background of Tiger Protection – International and Indian Scenario

Without the breath of the tiger there will be no wind, only clouds, and certainly no rain.

-The I Ching, The Chinese Classic Text

This chapter aims to give a brief description of tigers, their distribution, demand for tiger parts and articles in the international illegal market, global legislations and provisions for protecting the tiger, legislative provisions in India, administrative structure of wildlife departments and tiger management reserves in India and areas in which different Non-Governmental Organizations on tiger protection are working on.

3.1 Tiger and its Distribution

Tiger is the national animal of India and understanding briefly the types, biology, nature and behavior of tiger is important to have a proper appreciation of the study. Eight sub species of tiger (*Panthera tigris*) have been recognized scientifically, of which three (Caspian tiger, Java tiger and Bali tiger) are extinct from the globe. Among the rest, no wild population of South China tiger exists and the population of all other tigers (Indo Chinese, Sumatran and Amur tiger- except Bengal tiger) ranges from 100–450 each (NTCA 2014). Bengal tiger's population in India is estimated to be around 1700, and thus, India is the largest home of wild tigers in the world today. In this paper, unless and otherwise specified, all the references are made to the Indian Bengal tigers.

India had a population of around 40,000 tigers in 1930s (Tilson and Nyhus 2010:295, Karanth 2006:927), and Asia was having around 100,000 tigers in the beginning of 19th century (Nowell and Jackson 1996:58). However, due to unrestricted hunting by British rulers and Maharajas of India, the population witnessed a steep decline. During British period, tigers were killed in large numbers as a sport/hobby they followed and the Government

even had a permit system for hunting tigers (Tilson and Nyhus 2010:88). After the independence too, this trend continued and with the introduction of jeeps, which can travel in difficult terrains and with the increased availability of guns, hunting became still simpler for less rich people too (ibid). This, coupled with dwindling of forest area to accommodate the agricultural and industrial requirements after independence, took a heavy toll on the tiger population in the country (Johnsingh and Goyal 2005). Legislations were brought in after 1970s and as on date, around 1700 tigers are estimated to be surviving in Indian jungles.

Presently, India has 44 tiger reserves which are distributed in 18 Indian States throughout the length and breadth of the country covering an area of 68519 sq Km (NTCA 2014) (Figure 3.1 and Table 3.1). The census report of 2008 categorizes the tiger habitats into six different landscapes as, Shivalik-Gangetic plains, central Indian landscape complex, Eastern Ghats, Western Ghats, north eastern hills and Sunderbans (WPSI 2014c).

Including India, there are 13 tiger range countries in the world now and the presence of wild tigers has been identified in Bhutan (with an approximate population of 115-150), Bangladesh (359-Forest Department Estimates, 1992), Cambodia (200-Forest Department Estimates, 1994), Myanmar (100-125), Indonesia (400 Sumatran tigers), Vietnam (approximately 150), Nepal (96 – Department estimate, 2009) and Russia (around 400) (NTCA 2014). Thus the total population of wild tigers in the world is now around 2500-3000.

These terminal predators of the ecosystem have a wide adaptability and can live in a range of habitats—from the tropical dry and thorny forests of Rajasthan and evergreen forests of Western Ghats of South India to tidal mangrove swamp environment of Sundarban forests in West Bengal. Tigers are solitary animals and their brief interactions with other tigers are restricted to mating and occasional sharing of the kills. They have distinct territories demarcated for each animal and the total forest area (available for their habitat) and prey density, play a crucial role in deciding their population (Tilson and Nyhus 2010:27). They prey on a wide range of animals from deer

to very big animals like Indian guar and require around 15-18 kg of meat daily.

Tigers, with an average of 150 (female) to 250 Kg weight and 3m length, are the largest living cats with black stripes against a yellow background, enabling the camouflage in forests. Average life of a wild tiger is around 12-14 years. The gestation period is around 103 days with 3-4 litters. The cubs stay with mother for around 25-30 months and then they become independent.

Figure 3.1 : Map showing Tiger Reserves in India (Source : NTCA 2014)



3.2 Demand for Tiger Products – An overview

Tiger conservation is influenced mainly by two factors – poaching and habitat loss (Nowell and Jackson 1996:149-243; Mathew *et al* 2014:46; Dinerstein *et al* 2007). While habitat loss is due to many reasons like encroachment of forests, diversion of forests for other uses, human disturbances, less prey population density, etc., poaching is a distinct reason for large scale decline in tiger population in the last century (Mathew *et al* 2014:46). Tigers are poached mainly (i) to accommodate the demand for tiger articles and (ii) to take revenge in case of human–animal conflicts.

Interpol (2011) estimates the annual illegal trade of wildlife products to around US\$ 12 billion and claims that the illegal trade and trafficking of tiger articles are flourishing extremely across the globe. Demand for tiger products exists in many countries and many cases have been detected in China, Taiwan, Japan, South Korea, the United States and Great Britain (Craig 2014).

The traditional medicine industry (especially in China) is the chief cause for the demand of tiger parts and a huge population living in China are believed to use such traditional medicine, with Hong Kong being the main importer of its medicine (Craig 2014). Japan, South Korea, Indonesia, Taiwan and United Kingdom are believed to have been involved in the tiger trade in big level and this has increased the demand for tiger products considerably in the world market (*ibid*). Only during 1990s, it came to light that Traditional Chinese Medicine (TCM) industry used tiger parts in its very expensive medicines, by which time, China's own tiger population got exhausted and India was explored as a new source for tiger parts (Tilson and Nyhus 2010:89). With the western and non-Asian countries supplementing their methods with Chinese practices, we can predict the growing global demand for the tiger parts worldwide (Craig 2014). These Chinese medicines are assuming significance for their alleged abilities to cure inflammation, many types of body pains and as aphrodisiac, though many reports suggest that it is psychological than pharmacological (Tilson and Nyhus 2010:464). According to WWF (2014), all parts of the tiger, say from whisker to tail, are being traded illegally in Asia for preparation of traditional and folk medicines and also as a

status symbol. Despite the universal ban on tiger trade since long period, illegal demand for the tiger products remains still active. After the prohibition of all domestic trades in tiger parts in China (in 1993), the surveys conducted by TRAFFIC show there is a significant decrease in the tiger bone medicine but it has not been completely stopped (Nowell and Xu 2007:14).

WWF (2014) while announcing the worldwide seizure of around 1600 tigers and their body parts during the period from 2000-2014 (roughly representing the killing of two tigers in a week), confirmed that tiger parts are having a big demand in Asian countries.

3.3 Global Legislative Provisions for Tiger Protection

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) accorded highest protection to tiger species by including it in Appendix I (meant for those threatened with extinction) of its classification thereby prohibiting commercial trade in tiger parts in 1975 and restrictions too were imposed on import and export of tiger articles. Since then, the international trading of any tiger parts became illegal (CITES 2014). As on date, 180 countries are part of this convention and they follow the regulations of CITES.

All the 13 tiger range countries (Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand and Vietnam) have formed their own internal legislations to protect tigers from poaching and trading, in accordance with CITES regulations.

The International Union for Conservation of Nature (IUCN), the world's largest and oldest conservation network with membership from more than 200 countries and more than 900 NGOs, has continuously been declaring tigers as the 'most endangered or critically endangered species' in its Red List database since 1986 (IUCN 2014), insisting the need for strong conservation and protection measures for tigers.

In 1993, the State Council of the People's Republic of China banned the domestic trade in tiger bones and related parts in the country and destroyed most of the stock meant for traditional medicines and handicrafts. Since then,

trade became effectively illegal in all the markets. As per the provisions of People's Republic of China Law for Protection of Wildlife and the list of Wildlife under National Important Protection, the South China tiger has been accorded first level of national protection (The China Action Plan for Saving the South China Tiger n.d.:3-4). There is a complete prohibition on hunting and killing of the species with a punishment of 7 years of imprisonment for the offenders. Besides these legislative provisions, China also entered into bilateral special agreements with Governments of India and Russia on tiger protection (ibid:4).

However, since crimes against tiger are transnational involving both petty opportunistic criminal elements and well organized gangs/networks, it becomes almost impossible for a single enforcement agency or a single nation to prevent the crimes and nab the criminals (Interpol 2014:2). Therefore, Interpol has been actively involved in prevention of crimes against tiger through its Environmental Crime Wing and conducts special operations through its member countries periodically to check the offences.

3.4 Legislation in India

India's Wildlife (Protection) Act (WLPA) enacted in 1972 prohibited hunting of tigers. In 1973, Project Tiger was launched to conserve Indian tigers, in 9 tiger reserves and presently, the project has been extended to 44 tiger reserves over 18 Indian States. With the amendment in 1986, WLPA prohibited all the trade in Schedule I animals, including tigers. (Oak, n.d). In 1991, the punishments for poaching of Schedule I animals were enhanced thus giving more protection to tiger and other endangered species.

The WLPA is a central act, enacted by the Parliament and the same is being implemented by the State Governments, with modifications, wherever necessary, without diluting the provisions in the original act. The subject of wildlife falls under the concurrent list of subjects listed in the seventh schedule (Article 246) of constitution of India (MoLJ 2007). Thus, the Central Government retains the ultimate authority to make legislations with reference to the subject of wildlife, though the State Governments are the direct custodians and managers of the wildlife areas. Accordingly, the legislative

provisions made for wildlife protection from time to time, are being implemented by the States in their respective jurisdictions.

In 2006, the immediate concern for tiger protection was recognized after the study conducted by the special tiger task force and special provisions were introduced into the WLPA wherein, the offences against the tigers were given further stringent penalties. Section 51(1)(C) introduced through the amendment (MoEF 2006) declared that,

“Any person, who commits an offence in relation to the core area of a tiger reserve or where the offence relate to hunting in the tiger reserve.....shall be punishable on first conviction with imprisonment for a term which shall not be less than three years but may extend to seven years, and also with fine which shall not be less than 50,000 rupees but may extend to 2,00,000 rupees; and in the event of a second or subsequent conviction with imprisonment for a term of not less than seven years and also with fine which shall not be less than 5,00,000 rupees but may extend to 50,00,000 rupees” and Section 51(1) (D) provided that

“Whoever, abets any offence punishable under sub-section (1C) shall, if the act abetted is committed in consequence of the abetment, be punishable with the punishment provided for that offence”.

The amendment also provided for establishment of a specialized enforcement agency, called Tiger and Other Endangered Species Crime Control Bureau to deal with crimes against tigers and a national level authority for tiger conservation. Accordingly, Wildlife Crime Control Bureau (WCCB) and National Tiger Conservation Authority (NTCA) were established subsequently, bringing direct role of Central Government over the tiger conservation affairs. As per the provisions of the WLPA, forest officials (both State and Central) and police officials can take cognizance of the offences and register the cases.

As far as the issue of prevention of illegal transnational trade is concerned, the provisions of Indian Customs Act are applied against export or import. The Export Import (EXIM) Policy of India completely bans the trade of any tiger articles and parts, as per the provisions envisaged by CITES. The Indian CITES authorities posted in the exit points of major Indian seaports and airports, regularly check the consignments for violation of WIPA, CITES and EXIM Policy of India and the violations are dealt with the provisions under both WIPA and Customs Act.

3.5 Administration of Tiger Reserves

India has 44 tiger reserves and all these tiger reserves come under the jurisdiction of different State Governments. They are principally under the management of State wildlife departments, which are the part of the State forest departments. The State wildlife department is headed by a senior forest officer (usually the second most senior, next to the Head of Forest Force in the State) from the Indian Forest Service. Individual reserves are usually headed by a Director, who is also from the Indian Forest Service cadre and is assisted by a team of field officers in the rank of Deputy Directors, Forest Range Officers, Deputy Range Officers, Foresters, Forest Guards and Anti-Poaching Watchers. The Director reports to the State Department and to NTCA in all matters pertaining to tiger protection and conservation.

State wildlife department takes care of the budgetary provisions for the expenses towards the salary and other management activities. The revenue generated from the reserves through various activities like eco-tourism, minor forest products and extractions will be remitted either to the state accounts or to the trusts/foundations established in the tiger reserve for the management of the reserve and welfare of the communities living in the reserve. NTCA provides funds for conservation and protection of tigers after approving the individual action plan of the tiger reserves.

3.6 Non-Governmental Organizations

A number of Non-Governmental Organizations (NGOs) are working in the country for the protection of tigers. World Wide Fund for Nature (WWF),

Wildlife Trust of India (WTI), TRAFFIC India, Wildlife Protection Society of India (WPSI), Wildlife Conservation Society (WCS), Tiger Watch and Wildlife Conservation Trust (WCT) are some of the organizations working for tiger conservation in India. They do not have direct access to the wildlife areas, which are under the jurisdiction of state administration and they work closely with the wildlife departments. Protection, technical support, intelligence collection, community rights, relocation of tribals, resolution of man-animal conflicts, tiger counting during census and capacity building of forest officials and the local communities are the important areas of these NGOs, besides conducting scientific studies on the ecology and behavioural studies of tigers in the forests.

3.7 Man- Animal Conflicts – A brief outlook

One of the important factors affecting tiger population is the increased biotic pressure resulting in habitat loss which ultimately causes instability in the tiger population (Soule 1986). India, having more than 60% of world's tiger population, constantly faces the management problems of man-animal conflicts, especially with reference to larger carnivores like tigers, leopards and lions which frequently attack humans and lift their cattle (Chauhan 2011). Usually, a tiger attacking a human is recognized as an aberrant form among tigers and a man-eater is a rare phenomenon in tigers (Siddiqi and Choudhury 1986). Studies indicate that for better management of such conflicts, it is necessary to focus on protection and improvement of the habitat, relocation of the villagers outside the reserves and providing prompt and timely compensation for the losses (Chauhan 2011). It really becomes a big problem when the cost of conservation falls as burden on the local communities affecting the human lives and their economy. Such conflicts can be reduced by addressing them through prompt and quick compensations for the human deaths and livestock depredation and with measures to create appropriate protection structures and timely trapping of problematic animals, which are necessary to address the 'Park-People' interface conflicts (NTCA 2014).

Chapter 4

National Tiger Conservation Authority

The eyes of the tiger are the brightest of any animal on Earth. They blaze back the ambient light with awe-inspiring intensity. It would be a tragedy, and a terrible dereliction of duty, if we allowed that magical fire to burn out

- Billy Arjan Singh, Indian hunter turned conservationist

The National Tiger Conservation Authority (NTCA) is a statutory body established by the Government of India under the Ministry of Environment and Forests, under the provisions of Chapter IV B (Section 38L) of WLPA. NTCA was established in 2006 following the recommendations of Tiger Task Force for strengthening the tiger conservation in the country and is having an overreaching supervisory and coordination role. This chapter attempts to describe the evolution of NTCA, the background behind the amendment of the WLPA, the constitution of NTCA, its organizational structure, powers, mandated functions and the budgetary provisions for its various activities.

4.1 Project Tiger

In 1970, India witnessed concern from the International Union for Conservation of Nature (IUCN) on declining tiger population in India and other countries. The 1971 census conducted in India revealed that the tiger population in the country was around 1800 (Tilson and Nyhus 2010:5). In 1972, the General Assembly of IUCN called for moratorium on tiger hunting and listed the Indian tigers as endangered species in its Red Data book (Goodwin and Holloway 1978). In 1968 alone around 3000 tigers were poached and their skins were exported (Tilson and Nyhus 2010:88) and when the statistical data were made public, Indian Government decided to bring in its own law to protect the Indian tigers and wildlife. Taking the model of Kenyan wildlife legislation, India formulated its own Wildlife (Protection) Act in 1972 (ibid:89). To protect the Indian tigers, the then Prime Minister of India, Indira Gandhi launched a special project called 'Project Tiger' on 01.04.1973 with a main objective of ensuring a sustainable population of tigers in the country and to preserve the national heritage. It started with 9 tiger reserves to which more reserves were added periodically. Meanwhile, a

complete ban on international trade of all tiger products was introduced in 1987. Presently, there are 44 reserves, spread over 18 Indian States, under Project Tiger which is continuing as an 'On-Going Centrally Sponsored Project' under the Ministry of Environment and Forests of Government of India assisting the States in tiger conservation in the reserves.

4.2 Tiger Task Force and Amendment of Wildlife (Protection) Act, 1972

The tiger population in India was steadily increasing till 2002, as per the estimate done by the Project Tiger officials (Table 4.1). The old methods used for assessing the population of tigers using its pug marks were claimed to be vague by the NGOs and scientists and the Government conducted a study using pugmarks and other scientific methods (Tilson and Nyhus 2010:93)

Table 4.1 : Total population of tigers in India

Year	Number of Tigers	Method used for census
1972	1827	Pugmark method
1979	3015	-do-
1984	4005	-do-
1989	4334	-do-
1993	3750	-do-
1997	3508	-do-
2001-02	3642	-do-
2005	<2000	-do-
2006	1411	-do-
2010	1706	Camera Trap

(Source : Tiger Tribe 2014)

Once the decline in the tiger population was ascertained, it became a serious matter of concern for the Government. Severe criticisms were made by experts and NGOs on the functioning of Project Tiger and they claimed that the officials were in a denying mode and blind to the fact that the numbers were decreasing (ibid:94). During the same period, the Report of Comptroller and Auditor General of India (2006:44) revealed that the Project Tiger had serious problems in the implementation, monitoring, coordination and reporting its tasks. It also criticized that State Governments, which received

the funds from the Project, did not utilize them for the purposes meant and were diverting for other purposes and the staff were unfit and ill equipped to meet the demands in the field. At this point of time, in 2004, it was discovered by the special team which surveyed the Sariska Tiger Reserve of Rajasthan State that no tiger was surviving in the reserve against the reported population of 16-18. The Government immediately set up a Tiger Task Force (TTF), on the basis of the recommendations of the National Board for Wildlife (headed by the Prime Minister of India) with five private members selected from the eminent tiger conservationists and NGOs to study the existing status and suggest strategies to strengthen the tiger conservation process. TTF submitted its report in three months and the report severely criticized the functioning of the Project Tiger in policy, enforcement, budgetary and administrative fronts (The report of TTF 2005:168-170). It emphasized the need for creation of a National Tiger Management Committee and a Wildlife Crime Bureau at central level for effective conservation, on top priority basis (ibid:146-150).

Following the recommendations of the TTF, the Government amended the Wildlife (Protection) Act, 1972 on 04.09.2006 (popularly known as 'Tiger Amendment' (Bijoy 2011:37)) making special provisions for setting up the National Tiger Conservation Authority (NTCA) and Wildlife Crime Control Bureau (WCCB). NTCA was also constituted on the same date (04.09.2006), with immediate effect.

4.3 Wildlife Crime Control Bureau

Wildlife Crime Control Bureau (WCCB), established under the provisions of amended WLPA is a body created to combat organized wildlife crimes in India. It became operational in mid-20087 as a multi-disciplinary organization with the senior level officers chosen from the Police, Forests and Customs departments and the frontline officers from all enforcement agencies like Central Bureau of Investigation, Railway Protection Force, Border Security Force, Forests, Police, Narcotics Control Bureau, National Crime Records Bureau, Customs and other similar organizations. The Bureau has its headquarters at New Delhi and is headed by a Police Officer in the level of

Inspector General of Police. There are five Regional Offices in the Bureau, headed by Regional Deputy Directors, located at Chennai (South), Delhi (North), Mumbai (West), Kolkata (East) and Jabalpur (Central).

WCCB is mandated to collect and collate information relating to wildlife crimes and it circulates alerts and particulars to the relevant enforcement agency coordinating the enforcement actions. It is the nodal agency on wildlife crimes in India and coordinates the requests and information received from foreign enforcement agencies, relating to wildlife crimes. It also provides assistance to State Governments in prosecution of offences, gives scientific and professional assistance to enforcement agencies to investigate crimes, technical assistance to Customs in implementing CITES and EXIM Policy through Customs Act, collects the data on wildlife crimes, manages a centralized record on wildlife crimes and criminals in the country and provides advice to Government of India on policy matter regarding wildlife issues (MoEF 2006). It also conducts regular capacity building programme for different enforcement agencies on legal, technical and enforcement issues at various levels and to judiciary officials on recent updates on the wildlife legislations in the country (WCCB 2013). As indicated in the amended act (section 38Y), the Bureau was chiefly meant for tigers and was constituted as Tiger and other endangered species crime control bureau. The Bureau thus tracks all the unnatural deaths of tigers and exerts special efforts to deal with the crimes related to tiger poaching.

4.4 Constitution of NTCA

In November 2006, the Government constituted the NTCA with the Minister of Environment and Forests (MoEF) as its Chairperson. It included the Minister of State (MoEF) as Vice-Chairperson and three Members of Parliament as Members. Other members included the Secretaries from the central Ministries of Environment and Forests, Tribal Welfare, Social Justice and Empowerment and Panchayati Raj. Senior bureaucrats from the Ministry of law, Wildlife Department and Chairpersons of National Commission of Scheduled Caste and Scheduled Tribe were also made the members of the Authority. Besides, Chief Wildlife Wardens of six Indian States (on a rotation

basis for every three years) were included as members. The authority also included eight members in the category of experts/professionals with professional knowledge of wildlife conservation and experience and for administrative purposes, a senior forest officer with ample experience in the field of tiger conservation was made the Member-Secretary (MoEF 2006).

4.5 Organization Structure of NTCA

In NTCA the Member-Secretary, a senior forest officer in the rank of Additional Director General (ADG) of Forests, is the administrative head, who reports to the Minister of Environment and Forests. The headquarters of NTCA is in New Delhi and at present, it has three regional offices, one at Bengaluru (South), another at Nagpur (West) and the third at Guwahati (North East). Under the ADG there are four Inspector General of Forests, posted one each in the headquarters and in three regional offices. Under the Inspector General of Forests, Deputy Inspector Generals and Assistant Inspector Generals of Forests are posted and different tiger states have been divided among these offices according to their geographical locations.

4.6 Functions of NTCA

NTCA now manages the Centrally Sponsored Scheme of Project Tiger in 44 tiger reserves of India. It is mandated to approve the tiger conservation plans of individual reserves which, *inter alia*, include protection, habitat management, eco development measures, relocation of local communities from core reserve areas, tackling human-wildlife conflicts and following standard protocols/procedures prescribed by NTCA from time to time. It also provides instructions on measures to be undertaken for the future conservation plans, prey-predator ratio to be maintained in the reserve, level of habitat environment to be maintained, surveillance of diseases, etc. It thus ensures the critical support for State Governments in providing timely inputs on scientific, legal and technical issues, in implementing conservation plans.

One of the main functions of NTCA is to conduct a national level survey on the status of tiger, co-predators, prey and habitats. This exercise is carried out once in every four years and this uses modern techniques, approved by

TTF. The authority is mandated to improve the capacity of the front line staff involved in tiger conservation through special capacity building programmes at different levels.

In prevention of crimes against tigers, NTCA and WCCB have an important role of issuing alerts to individual reserves, enforcement agencies and States on the networks, linkages and possible movement of poachers. NTCA has been entrusted with the objective of preparing a database of all the tigers in the country so that they can be correlated with the dead or poached tigers or their seized body parts. It assists the State Governments to enhance their monitoring and protection strategies.

NTCA also focusses on issues relating to man-animal conflicts and compensation related matters. As the damages caused due to wild animals need to be immediately addressed to avoid revenge killings by the communities, NTCA keeps it on priority and ensures that they are paid in time. NTCA is also mandated to address the livelihood issues of local communities living in and around the tiger reserves.

Besides these functional roles, it has the responsibility of fostering the accountability for the management of all tiger reserves jointly by Central and State Governments through an appropriate Memorandum of Understanding in the federal structure. It is also duty bound to provide a vision for the Parliament in the tiger conservation issues.

4.7 Powers of NTCA

NTCA, which manages the Project Tiger now, is responsible for granting central government funds to all the tiger reserves in the country. Thus, it needs to approve the tiger conservation plans prepared by the individual reserves and thereafter, grants funds for their different sanctioned activities.

It lays down the standards for tourism activities and issues different guidelines periodically with reference to core and buffer areas of the reserves and ensures the compliance of the same. In its capacity to ensure the habitat protection of tigers in the country, it has the powers to restrict altering the boundaries of any tiger reserve and diversion of protected area or tiger

reserve to other unsustainable uses, except in cases of public interest with the approval of National Board for Wildlife, headed by Prime Minister of the country (MoEF 2006)

NTCA also lays down guidelines from time to time for different procedures to be followed in case of tiger deaths, poaching incidents and tourism activities in the reserve areas. They need to be followed by the tiger reserves and their compliance is required to be reported.

4.8 Budgetary Provisions

The total allocation for the project during the 12th Plan is Rs. 12450 million and the expenditure of the organization during 2012-13 and 2013-14 are around 1680 million and 1700 million rupees (Table 4.2). Almost all the budget is meant for assistance to States and the same is released as per the approved conservation plans of individual tiger reserves. A part of the budget (around 9%) is earmarked for scheduled tribes and scheduled castes under sub plans. Another part (around 4%) has been earmarked for grant-in-aids.

4.9 Current Activities of NTCA

Besides its regular activities relating to managing the ongoing Centrally Sponsored Scheme of Project Tiger in the 44 tiger reserves of the country, after duly approving their conservation plans and strategies and census exercises, NTCA has been involved in the task of management assessment of effectiveness of the tiger reserves in the country based on IUCN framework. They are also helping the State Departments to refine their monitoring system of protection through a system called 'Monitoring System for Tiger's Intensive Protection and Ecological Status (M-STripES) (NTCA 2014). It is now focusing on declaring and consolidating new tiger reserves to increase the habitat area for the animal and on research activities on tiger conservation. Among the 13 tiger range countries, India is presently hosting the largest number of tigers and therefore, maintaining the genetic pool and healthy gene flow have been perceived as important tasks ahead (NTCA 2014).

4.10 NTCA – Major Strengths and Weaknesses

NTCA derives its main strength from its constitution itself. The Minister of MoEF is the Chairman who directly reviews the affairs with the Members of Parliament and expert members. Being the 'high level' authority, this assumes significance in the conservation exercise, keeping it closer to power circle, enabling quicker decisions. The selection of Member-Secretary cum ADG of the authority is made from a group of senior wildlife bureaucrats possessing wide and rich experience in tiger conservation. The eligibility criteria demand that the officer should have at least 10 years of experience in tiger reserve. Other senior officials are also selected on similar criteria. NTCA now assumes significance on account of its greater role in approving the plans and disbursing the funds according to the sanctioned works. Experts examine the plans and that is an advantage to the authority's approach.

However, NTCA, being a new organization, has to start its strategy afresh. New officials need to be recruited, trained and the entire infrastructure needs to be developed. New conservation strategies, plans and approaches need to be formulated and tested in the field conditions, which require lot of efforts and resources. Different tiger reserves in the country need to be sensitized on the new approaches and it is indeed a difficult task to streamline the process in a vast country like India.

When we look at the opportunities that NTCA has, we can observe that since it has been evolved out of failure of different conservation strategies, the new authority and its approaches will be viewed positively and demands for funds can pass through smoothly. This is true especially when we consider the higher level access that the authority can have due to the nature of its composition.

At the same time, it is also a fact that it may have to face stiff opposition for changing from the long existing system, from the field units, which are known for their old-fashioned and top-to-down approach. A simple failure in any of the approach will be evaluated very critically by NGOs as well as field units. And results required to be shown quickly and convincingly.

Chapter 5

Objectives, Approaches and Outcomes of NTCA

When a man wants to murder a tiger, he calls it sport. When a tiger wants to murder him, he calls it ferocity

– George Bernard Shaw

In this chapter, various approaches adopted by NTCA to achieve its goals of tiger conservation and protection are elaborated and the statistical details collected during the study are presented.

5.1 Mandated Duties of NTCA

The amendment made in 2006 in WLPA describes the following mandates for the NTCA (MoEF 2006).

(i) To approve the Tiger Conservation Plan (TCP) prepared by the individual tiger reserves

(ii) To assess and restrict diversion of activities relating to industry, mining and other projects in the reserves

(iii) To fix up regulatory norms and guidelines for tourism related activities in the reserve areas

(iv) To provide management focus and measures to address man-animal conflicts

(v) To provide information relating to protection measures, future conservation plan, disease surveillance, population of tigers and prey animals, mortality details and patrolling - with a vision on the future management.

(vi) To conduct research and monitoring of tigers and other wild animals

(vii) To carry out tiger reserve management through adopting people participation

(viii) To ensure scientific, legal and information technology support for better implementation of the plans

(ix) To facilitate capacity building programmes for wildlife officials

Starting its operation in 2006, NTCA adopted certain institutional systems and procedures to achieve these objectives. A brief description of various approaches adopted and the effects thereof are collected and presented below.

5.2 Tiger Conservation Plans

Tiger conservation plans are the basic tools for general administration of a tiger reserve. The report of TTF (2005:198) strongly insisted that revamping of institutional structures and processes in planning, implementation, monitoring and counteractive measures are required to be undertaken and the plans of the State governments should be examined thoroughly and approved for funding. Comptroller and Auditor General of India (2006:3) also emphasized the need for proper scrutiny and approval of the management plans of the tiger reserves for successful management. They play a crucial role in the tiger conservation since these plans are the basic maps, which ensure the habitat inputs for the tiger population available, maintenance of co-predators and prey animals in a sustainable way, linking of adjoining protected areas to provide dispersal habitats and sufficient corridor for additional population of tigers and other animals, taking into account the issues relating to livelihood of local communities. It is also the tool to ensure that the regular forest operations of the reserve and adjoining forests are in tandem with the conservation strategies. They also form the basis for allocation of funds from NTCA. Thus, a methodical study and approval of such plans are key to success of tiger conservation.

A random checking of the available plans by the team of Comptroller and Auditor General of India, the supreme audit institution in India in 2006 (before the amendment of the WLPA and introduction of NTCA) indicated many discrepancies between the overall management plan and annual plan of operations in the reserves, estimates and projections based on old data and

did not project any concern on the current state of affairs, lack of financial projections for carrying out the objectives, lack of both physical and financial targets and not addressing serious issues relating to roles of Non-Governmental Organizations in developing the reserves, capacity building programmes for the field officials, habitat conservation and activities regulating tourism in reserves (CAG 2006:4). During 2001-05, the funds demanded by some of the reserves, actual amount released to them and the activities that could not be carried out due to the deficiency, are presented as below.

Table 5.1 : Funds demanded, allotted and works that could not be carried out in some of the tiger reserves during 2001-05.

Tiger Reserve / State	Funds demanded (in Million Rupees)	Funds demanded (in Million Rupees)	Works which could not be carried out due to fund shortage
Ranthambore, Rajasthan	789.4	108.7	Periodicity for vaccination of animals, relocation of villages, rehabilitation of nomadic tribes, development of prey base, plan for education and awareness
Thadoba Andheri, Maharashtra	0.6	0.2	Soil and water conservation and development of meadows
Pench, Maharashtra	3.1	0.9	Soil and water conservation and development of meadows.

(Source : CAG 2006)

The Report of TTF (2006:169-170) also highlights the total absence or poor quality of plans for managing the reserves and insisted that NTCA should facilitate the plans (ibid:198). After the introduction of NTCA in 2006, the tiger conservation plans presented by the States were scrutinized by the authority and of the 43 reserves for which the draft plans were submitted, the authority has approved five plans and sent the final comments for incorporation by the States in the plans in respect of 37 plans (NTCA 2014).

5.3 Financial assistance by NTCA to individual Tiger Reserves

NTCA provides financial assistance to individual tiger reserves after approving their respective conservation plans and the funds released during the 11th Plan, after its establishment, are given in Table 5.2. These funds are provided for meeting out the management purposes and the State Governments provide the salaries and regular perks for the personnel working in the tiger reserves.

5.4 Tourism

In regulating tourism, NTCA came out with detailed guidelines and issued advisory to all the State Governments in 2010 (NTCA 2014). These instructions prohibited using watch towers to be spared for tourists and emphasized that their purpose was only for monitoring and anti-poaching activities. Significantly, it banned all the tourism activities in the core/critical tiger habitats citing risks involved for the tourists in the core areas as activities of wild animals are observed more and their regular activities will also be disturbed. It was also cited that such a restriction was necessary to prevent the exposure of vulnerable areas to poachers, who may either patrol the area in the guise of tourists or may get the information through the tourists. In 2012, the Ministry went on further to completely close all tourism activities in the tiger reserves, following which the tourism industry faced a critical situation. However, later, NTCA, on behalf of the Government, agreed in the Supreme Court to accept regulated tourism in 20% of critical tiger habitat, which, it informed, would result in enhanced awareness enriching the educational value, especially among younger generation (DNA 2012). Bindra and Karanth (2013:15) also opine that though the Indian wildlife tourism grows rapidly (@15% per annum) demanding the limited resources and without adequately benefitting either the reserve or the local communities, these activities need to be encouraged as they promote public support and conservation of tigers in India.

5.5 Managing Man-Animal Conflicts and Village Relocations

NTCA is mandated to address man-animal conflict issues in the tiger reserves through adopting a policy of uniform and timely compensation for lives human and animals lost (NTCA 2014). The activities include payment of compensation, creation of protection structures and use of traps and procedures to capture the rogue animals.

Relocation of villages becomes crucial in the better management of tiger reserves as this is a pre-requisite for creation of inviolate-spaces which are necessary for sustaining a viable population and ecological functions (Soule and Terborgh 1999). India's wildlife policy emphasizes firm nature protection with minimum human interference (Shahabuddin *et al* 2007) and thus the relocation has become the part and parcel of NTCA's approach. As a specific amount is given for relocation of individual families, the funds allocated by NTCA to different tiger reserves for relocation is an indication on how efficiently the process is going on (Table 5.3).

As on 23.01.2013, a total number of 8,129 families have been shifted from 41 tiger reserves all around the country and 144 villages have been relocated from the notified core/critical tiger habitat areas. A total number of 51,329 families are still residing inside the reserves in around 787 villages (Natarajan 2013)

5.6 Tiger Conservation Foundations

The amendment done in 2006, as a part of ensuring people participation, emphasizes that tiger conservation foundations must be formed in all the tiger reserves with an objective of managing and conserving them efficiently by involving the local communities (MoEF 2006). These foundations aim to improve the cultural, social and economic conditions in the reserve and to promote eco-tourism involving the local stakeholders, i.e., the communities living inside the reserves and to use entry fees and other tourism fees levied, for the development of local communities who are the stakeholders.

Many authors extend their strong arguments on the direct relationship between the collapse of wildlife conservation and management in the reserves and the failure of involvement of local communities in the development process and uneven distribution of economic benefits arising out of the activities in the reserves (Little 1994; Sibanda and Omwega 1996:178; Udayasekhar, 1998:170). The TTF also observed in its report that conflicts of the tiger reserves with local community both inside and in the periphery of the reserve has resulted in failure of tiger conservation in India (The Report of TTF 2005: 169), and recommended that serious efforts should be taken to involve the local communities in conservation (ibid:172).

Following the mandate, NTCA (out of a total of 44 reserves) has so far facilitated the establishment of 34 tiger conservation foundations and the plans for another five are pending for approval (NTCA 2014).

5.7 Tiger Population/ Mortality / Poaching Cases

The tiger population is estimated once in every four years and the last estimate was compiled in 2010. The exercise done in 2010 had many refined methodologies compared to the one done in 2006 in terms of involvement of popular non-governmental organizations like Worldwide Fund for Nature (WWF) and Wildlife Trust of India (WTI) and local communities in data collection and analysis besides involving the technical expertise of Centre for Cellular and Molecular Biology-the premier organization in molecular biology in the country-for doing the genetic analysis from fecal samples, to have a more precise estimate (Sarkar 201:837). NTCA (2014) also claimed that the methodology adopted in 2010 was scientifically advanced and reliable as recommended by TTF, using camera traps with a statistical framework unlike the earlier ones which used pugmark and the DNA sampling of fecal matter was done to ascertain the minimum population of the tigers. A brief overview of populations as estimated in 2006 and 2010 are presented in Table 5.4. The organization is also establishing the data base of all the tigers captured in the survey and proposing to assign a Unique Tiger Identification (UTID) numbers to them (Patil *et al* 2013).

As far as tiger mortalities are concerned, a regular and constant update of tiger deaths and the seizures made in any part of the country is done at the portal of tigernet (tigernet.nic.in), which is the official data base of NTCA. The details of tiger mortality, both due to natural causes and poaching (including those inferred from the seizure of tiger articles) for the last 15 years are presented in Table 5.5.

5.8 Capacity Building Programmes and Alerts/Advisories

NTCA provides funds to States for carrying out the activities approved in the conservation plans of the tiger reserves and capacity building through training programmes and workshops has been recognized as one of the recurrent sub head in the plans. NTCA also conducts field level workshops for field officers in tiger conservation and in 2013, such workshops were organized in Tadoba and Dudhwa tiger reserves for dealing with straying tigers (NTCA 2014).

WCCB, on the other hand, conducted around 37 training programmes in 2012-13 all over the country for the field officials of different enforcement agencies like police, forest, customs and others covering a range of officials in the hierarchy. (MoEF 2013:101-102).

Timely communication of the information/intelligence on poaching and threats to tigers to State Governments and reserves concerned, aids in prevention of adverse effects and better management of reserves (Pandey 2014). NTCA and WCCB are mandated to issue alerts and advisories periodically on the threats to tigers and the following are such communications issued by them during the recent past (Table 5.6).

As we observe, the advisories and alerts pertain to different subjects ranging from simple procedural protocols for tiger management, disease threats, reporting deaths, disposal of carcasses and articles seized and tourism, to movement of criminals and gangs, their profiles and illegal trade activities. A significant one among the protocols developed is the Standard Operating Procedure for tiger death, which elaborates what the officials should do right from the scene of crime or incident, whom to be informed,

formats to be sent, videos/photo evidences to be collected and the involvement of individual witnesses and NGOs approved by NTCA, in the post mortem process. This brings in transparency in the procedure and can eliminate bias and *mala fide* intentions of forest department, if any.

Chapter 6

Theoretical Analysis and Discussion

Tigers, except when wounded or when man-eaters, are on the whole very good-tempered...Occasionally a tiger will object to too close an approach to its cubs or to a kill that it is guarding. The objection invariably takes the form of growling, and if this does not prove effective it is followed by short rushes accompanied by terrifying roars. If these warnings are disregarded, the blame for any injury inflicted rests entirely with the intruder

- Jim Corbett

This chapter analyses the policy brought through the amendment of Wildlife (Protection) Amendment Act, 2006 using the theory and tools of governance, stakeholder analysis and policy evaluation.

6.1 Governance in Tiger Conservation

Wildlife governance involves many stakeholders, Central Government, State Governments, their different departments and organizations, local communities, Non-Governmental Organizations (NGOs) working for wildlife conservation, private traders involved in both the legal (touring activities) and illegal wildlife business people. Hyden (1999:185) describes governance, as the actions initiated for establishing regulations to exert control and to resolve the disputes arising out of them in the process of achieving specific objectives. The governance triangle model, suggested by Abbott and Snidal (2009) is an apt tool to study the governance process of tiger conservation, both before and after 2006, to understand role of different stakeholders and their interactions in the process.

6.1.1. Governance Triangle

The governance triangle describes the multiple stakeholders involved in tiger conservation process, where State plays the vital and crucial role through its enforcement and regulatory organizations. However, it has been proved from the findings of TTF (2005:169) (which reported how the conflicts between the management and local communities adversely affected the conservation strategies) that State alone cannot successfully govern the conservation. Studies emphasize that participation of communities is vital for sustained success of the reserves and Ecotourism Committees involving local

communities, bureaucrats and NGOs should be formed, channelizing the revenue generated through the activities for local development projects which is the ideal long term option for conservation (Banerjee 2014:224). Tourism in the form of ecotourism is considered as a conservation effort as it educates people and spread awareness to protect nature and ecosystems. Usually, ecotourism projects include naturalists as guides and involve education activities like trekking in the wild area, filming of wildlife shows and safaris. Therefore, these three actors (State, local communities and wildlife NGOs and partners of market – tourism and illegal market) play key roles in the governance of wildlife conservation.

With the present scenario, we can study the distribution of different schemes in the whole context. The triangle in Figure 6.1 indicates the interaction between State, Market and wildlife NGOs and local communities. The wildlife governance space has been divided into seven zones following Abbott and Snidal (2009) model and the areas in the three vertices (Zone 1, 2 and 3) indicate a single or a group of actors who principally act upon their own and with occasional involvement from the other groups. Thus, Zone 1 represents State actors – Central Government represented through MoEF, State Governments, Tiger Reserve management authorities, WCCB, WLPA, Customs Act, 1962, International Convention CITES, 1975 and Wildlife (Protection) Amendment Act 2006 (++ sign indicates other Acts in place like Indian Forest Act, 1927, Forest Conservation Act, 1980, Biodiversity Act, 2002, Amendments made, policies, action plans and guidelines).

Zone 2 represents actors from the field of Wildlife NGOs and local communities. These NGOs are self-funded and self-organized institutions receiving funds from donors and voluntary donations. They include both international NGOs like World Wide Fund for Nature (WWF), TRAFFIC, IUCN and domestic NGOs like Wildlife Conservation Society (WCS), Wildlife Protection Society of India (WPSI), Wildlife Trust of India (WTI) and prominent wildlife activists and enthusiasts. Local communities include both residing inside tiger reserves and those in the periphery/fringes of the reserves. The Civil Society Organizations involved in welfare and rights of tribes and forest dwellers are also included in this zone.

Figure 6.1. Governance Triangle of Tiger Conservation

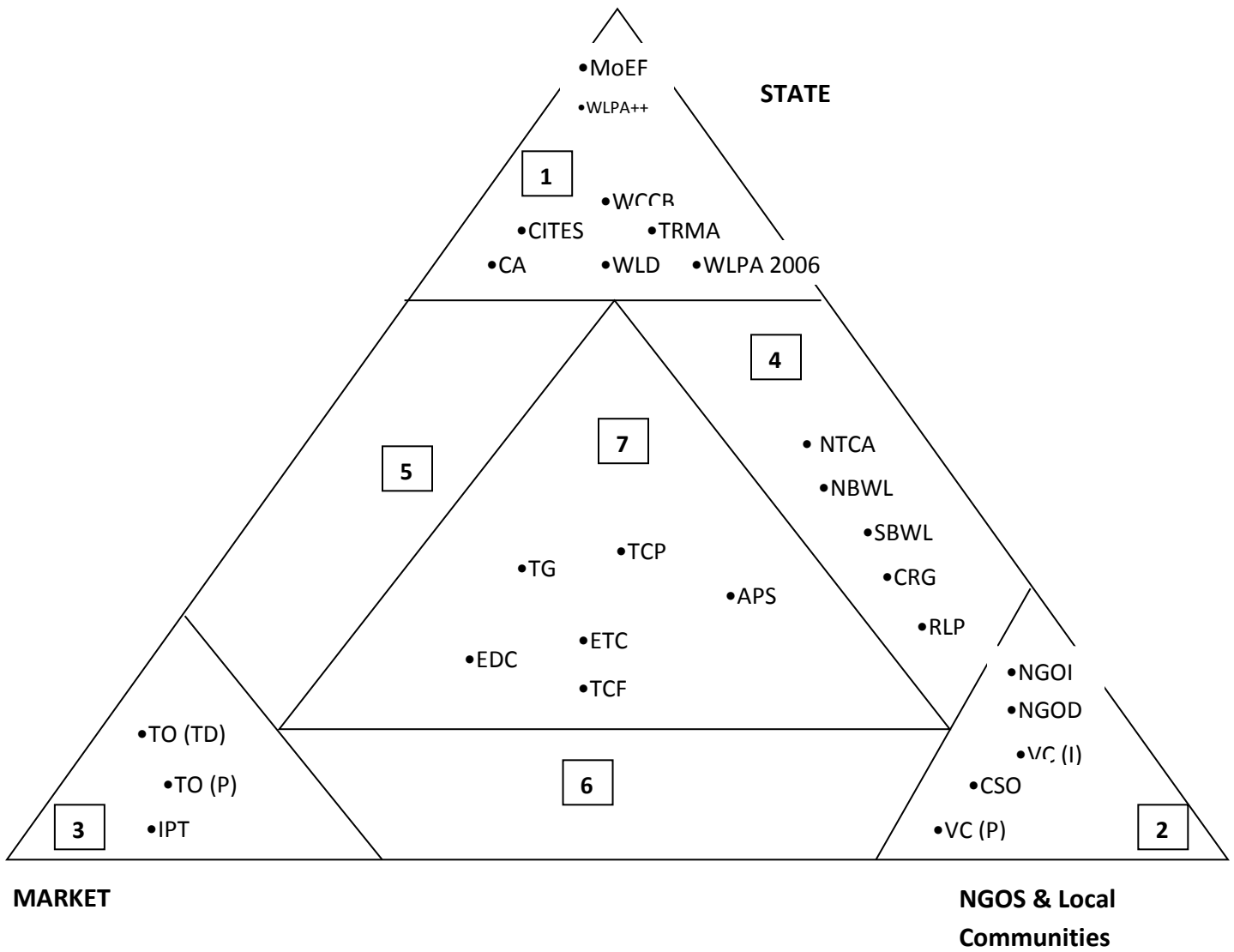


Table 6.1 Tiger Conservation Governance on Governance Triangle

Zone 1	<p>MoEF Ministry of Environment and Forests 1976</p> <p>WLPA Wildlife (Protection) Act, 1972</p> <p>WLPA 2006 Wildlife (Protection) Amendment Act 2006</p> <p>CA Customs Act, 1962</p> <p>CITES Convention on International Trade in Endangered Species of Fauna and Flora 1975</p> <p>WLD State Wildlife Departments 1976</p> <p>TRMA Tiger Reserve (Park) Management authorities</p> <p>WCCB Wildlife Crime Control Bureau 2007</p>
Zone 2	<p>VC (I) Village Communities inside reserves (from before 1970s)</p> <p>VC (P) Village Communities in periphery of reserves (from before 1970s)</p> <p>NGO (D) Domestic Wildlife NGOs (from before 2000)</p> <p>NGO (I) International Wildlife NGOs (from before 2000)</p> <p>CSO Civil Society Organizations working for tribal and forest people rights (from before 2000)</p>
Zone 3	<p>TO (P) Private Tour Operators and owners of hotels, resorts and other facilities around TRs (from before 2006)</p> <p>TO (TD) Tourism Department tour operators (from before 2006)</p> <p>IPT Illegal poachers and traders (from before 2006)</p>
Zone 4	<p>NTCA National Tiger Conservation Authority 2006</p> <p>NBWL Reconstituted National Board for Wildlife 2002</p> <p>SBWL Reconstituted State Wildlife Boards 2002</p> <p>RLP Relocation Projects for villages after 2007</p> <p>CRG Conflict Resolution Guidelines after 2007</p>
Zone 7	<p>TCP Tiger Conservation Plans approved by NTCA 2007</p> <p>TCF Tiger Conservation Foundations after 2007</p> <p>TG Tourism Guidelines 2010</p> <p>ETC Eco Tourism Committees after 2007</p> <p>EDC Eco Development Centres after 2007</p> <p>APS Anti-Poaching Squads after 2007</p>

Zone 3 represents the market area, which involves legal business activities like tourism, income generating activities and illegal trade of wildlife products covering poachers, middlemen and traders (both national and international). Tourism departments and eco awareness projects of State Governments and Forest Departments, private tour operators, organizations which conduct hotel and other facilities in and around the reserve areas are represented in this zone. The zones 4, 5 and 6 include those schemes involving actors from both the groups, and the process of governance is shared by both. In zone 4, NTCA, the reconstituted National Board for Wild Life (2003), State Wildlife Boards (2003), which involve NGOs and wildlife experts to have a participatory approach in the decision making processes and new projects involving relocation of villages with special packages (2006), mandates regarding resolution of conflicts with local communities, have been represented. Zone 5 and 6 are spaces relatively not dominantly represented by any actor. Zone 7 triangle includes actors from all the three types in 1, 2 and 3. Tiger Conservation Plans, Tiger Conservation Foundations, Committees of ecotourism involving local communities, eco development centre projects which are operated by local villagers in the tiger reserve areas, anti-poaching squads which employ local people for protection purposes and tourism guidelines issued by State are represented here.

6.1.2 Discussion

The positions of different actors in the governance triangle indicate the significance and part that they possess in the process of governance in their areas. For instance, Ministry of Environment and Forests, at the top corner of the triangle indicates its 100% allocation in its domain. Other actors are placed in positions which correspond to their actual share in the governance process. National Wildlife Board and State Wildlife Boards are placed between State and NGOs category with a more proximity to State as the State's constitution and role is approximately 70% in the governance. Similarly ecotourism projects and eco development centre schemes are having more shares of communities.

FIGURE 6.2.1 and 6.2.2 Governance Triangle – Before and after 2006

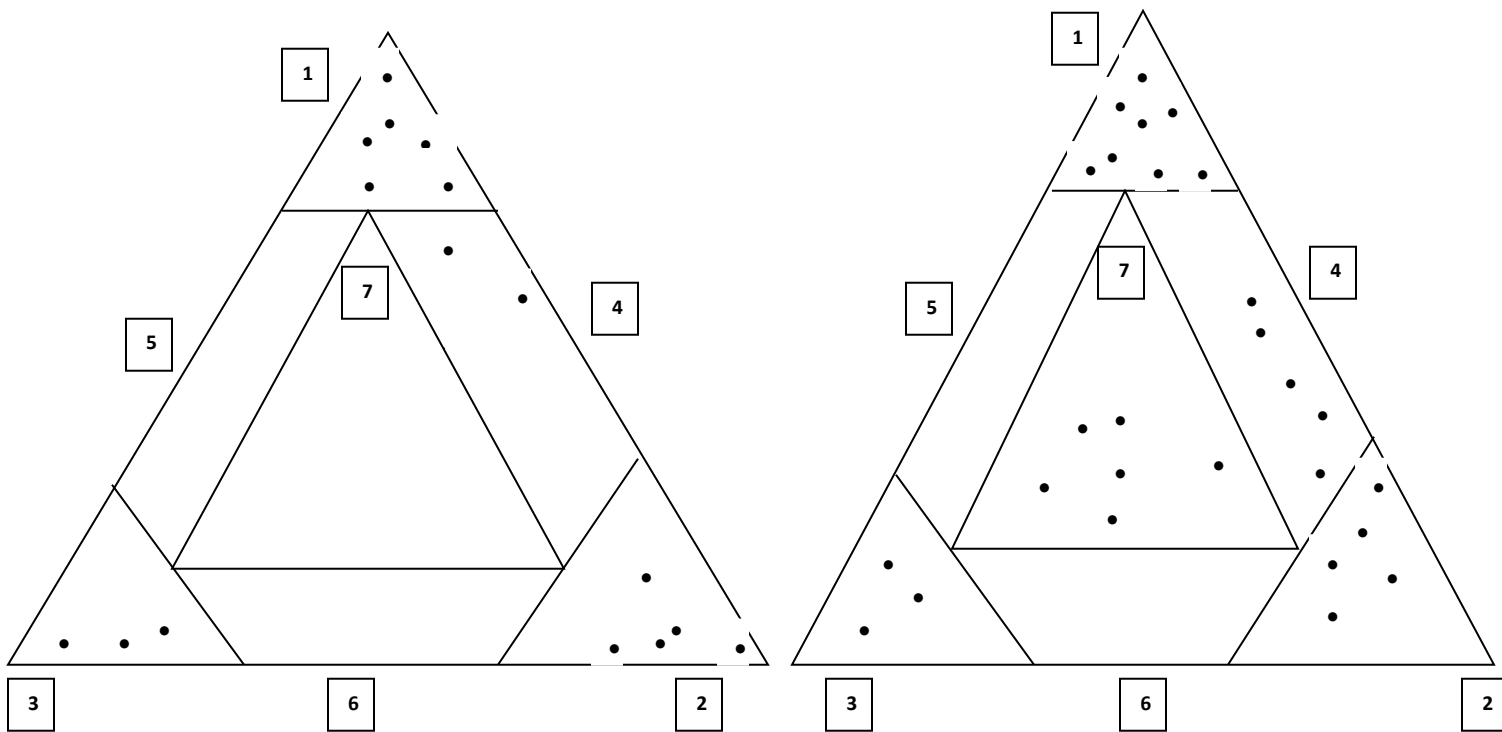


Figure 6.2.1 Before 2006

Figure 6.2.2 After 2006

In the governance of tiger conservation, State, both in its individual capacity and its participatory approach, has been considered as the apex institution and it rules through legislation, regulatory organizations and state units. When we study figures 6.2.1 and 6.2.2, we can observe that after 2006, there is a change in the governance pattern. In fact, major changes of governance like conservation plans, eco tourism concepts, eco development initiatives, tiger conservation foundations, relocation concepts, conflict resolution guidelines and tourism regulations have been introduced only after 2006 and these governance measures have been brought by NTCA which itself was established as a measure of governance by the Government. These changes were brought under compelling conditions as indicated in chapter 4, which cannot be denied, but as may again be witnessed from table 6.2 and 6.3, State holds the key roles still.

Table 6.2 Actor competencies in stages of tiger conservation strategies

		Agenda				
		Setting	Negotiation	Implementation	Monitoring	Enforcement
Expertise	State NGOs	State NGOs (Trade operators)	State NGOs	State NGOs	State NGOs	State NGOs
Operational Capacity	State NGOs (Trade operators)	State (NGOs) (Trade Op)	State (NGOs) (Trade Op)	State NGOs	State NGOs (Trade Op)	State NGOs (Trade Op)
Independence	State (NGOs)	State (NGOs)	State	State (NGOs)	State	State
Representativeness	State (NGOs)	State NGOs	State	State NGOs	State	State

Table 6.3 Relative importance of actors in different stages of tiger conservation strategies

	Agenda Setting	Negotiation	Implementation	Monitoring	Enforcement
Market	Low	Low	Low	Low	Low
NGOs and LCs	Med-Low	Med-Low	Low	Medium- High	Low
State	High	High	Medium	Medium	High

In the triangle, we can observe the change in the governance pattern assumed by the NGOs after 2006. The NTCA, NBWL and SBWL include a good number of NGOs in their constitution and any decisions in these forums need to have their consent. This has made the process transparent and paved way for inclusion of expertise in the field of conservation. It has been learnt from

the NTCA Officials (C.M. Shivakumar, AIG, NTCA, personal communication, 13.08.2014) that local communities are involved in important decision making processes and notification of core and buffer area is possible only when local communities give consent who are consulted in the preparation and execution of plans and they are involved in protection and management

The changes brought in through the new amendment, initiatives and the shift towards the new type of governance system from the old one are visible. While legal tourism business is being promoted through new plans and participation, the illegal trade of wildlife poaching and trafficking are attempted to be prevented through employing local communities as members of anti-poaching squads. This has also brought in coordination, trust and transparency among different stake holders – State, NGOs, local communities and tourism market traders – and has aided in the conservation strategies of the governance process. But in the study, it has been learnt that there is no solid framework to share the revenue benefits received from the tourism activities (C.M. Shivakumar, AIG, NTCA, personal communication 13.08.14) which deprives the communities from accessing definite share for their developmental activities. Therefore, it is inferred that a good deal of work is lacking in framing up a proper legal back up for sharing the benefits of tourism for community development and thereby receiving their full cooperation in the governance. Thus, though the shift in governance has happened in a significant way, it can be inferred that it has not yet achieved its mandated objectives fully in terms of participatory approach.

6.2 Stakeholder Analysis

A stakeholder analysis was attempted in the present study to understand and assess the policy environment and to appraise the interests, conflicts, motives, mutual relationships and expectations, the level of influence and power they possess and their impact on the tiger conservation efforts, introduced through the measures after the amendment of the WLPA in 2006. As indicated by Varvasovszki and Brugha (2000:339), this analysis, done on the present existing policy, is aimed to understand the policy implementation and further scope.

Following the analogy and guidelines suggested by Overseas Development Agency (1995), the key stakeholders who can influence considerably and determine the success of the project, and primary stakeholders, who are finally affected both positively and negatively, have both been identified and recognized as primary stakeholders, for study purposes. These primary stakeholders include Union Government represented through the Ministry of Environment and Forests, NTCA, WCCB, Tiger Reserve Management and State Wildlife Departments, local communities in and around the reserves, poachers, illegal traders and the tigers. Secondary stakeholders, who are not directly affected in the strategy but are basically intermediaries, having interest in the process, include private owners of tour operations and facilities in the reserve areas, tourists, tourism departments, Wildlife NGOs, wildlife enthusiasts, international organizations like CITES and IUCN, media and some ministries (tribal welfare, industries, power) and Departments (police, customs and other enforcement agencies) which have indirect effect due to environmental concerns and increasing forest cover, which ultimately affects their agenda. All these secondary stakeholders have their own networks, power, funds and expertise which can play crucial roles either in favour of or against the programme. There are strong views that the tiger conservation is alien to local communities and take away the rights of existing dwellers (Vasan 2005:4806). Legislative members who believe in the arguments and fight against the expansion of tiger reserve areas and those who need some development projects in their areas but cannot implement due to the regulations governing reserve areas, belong to this category. They are also considered in the secondary stakeholder group.

6.2.1 Stakeholder Analysis Table

After identification of the primary and secondary stakeholders, these diverse groups of stakeholders were categorized into more homogeneous groups and listed under Government (both policy makers and implementing agencies), local communities, NGOs, private sector, international organizations, media and wildlife. Their specific interests, both covert and

overt interests, possible impact on the strategy (positive or negative), their influence, power and importance (ability) that can impede or facilitate the conservation strategy and the importance and priority that can be assigned to them in the stakeholder analysis of the conservation strategy were worked out with inputs from various sources including personal discussions with some of the representative stakeholders. Following the guidelines of ODA (1995), the probable impact of the strategy on the interests of these stakeholders were assessed in simple terms and classified as positive, negative or uncertain. While considering the resources of stakeholders, availability of various resources including finances, technology, work force, infrastructure possessed by them and their ability to bring to bear them in the conservation strategy were taken into account and an analysis table (Table 6.4) was formulated with the above inputs.

6.2.2 Stakeholder Influence and Importance Matrix

It is necessary to assess the power of different stakeholders to influence the conservation strategy to recognize the relative risks involved in the programme and to understand possible associations in the future (ICRA, n.d:5). This exercise is necessary also to ensure that more influential stakeholders are not impeding the project meant for beneficiaries with little or no influence/power (ibid). For this purpose, the influence and importance matrix was drawn up with all stakeholders and their relative influence and importance positions in the conservation programme map. From the earlier exercise done for stakeholder analysis table, inputs were drawn on different stakeholders and their relative influence and importance were determined. These positions were depicted in the two by two matrix of high and low importance and influence as shown in Figure 6.3.

Figure 6.3 Stakeholder Influence /Importance Matrix of Tiger Conservation Strategy (2014)

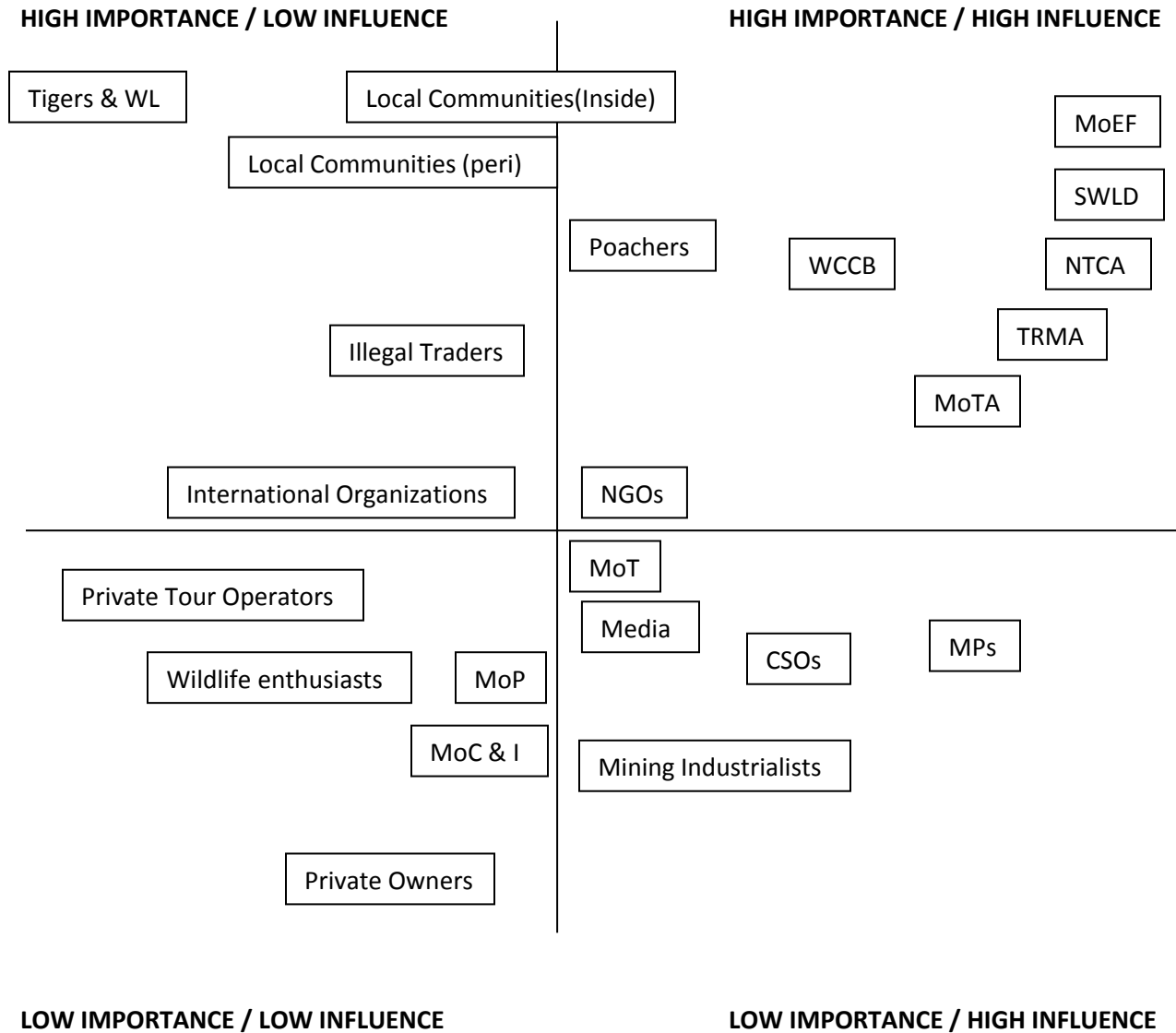
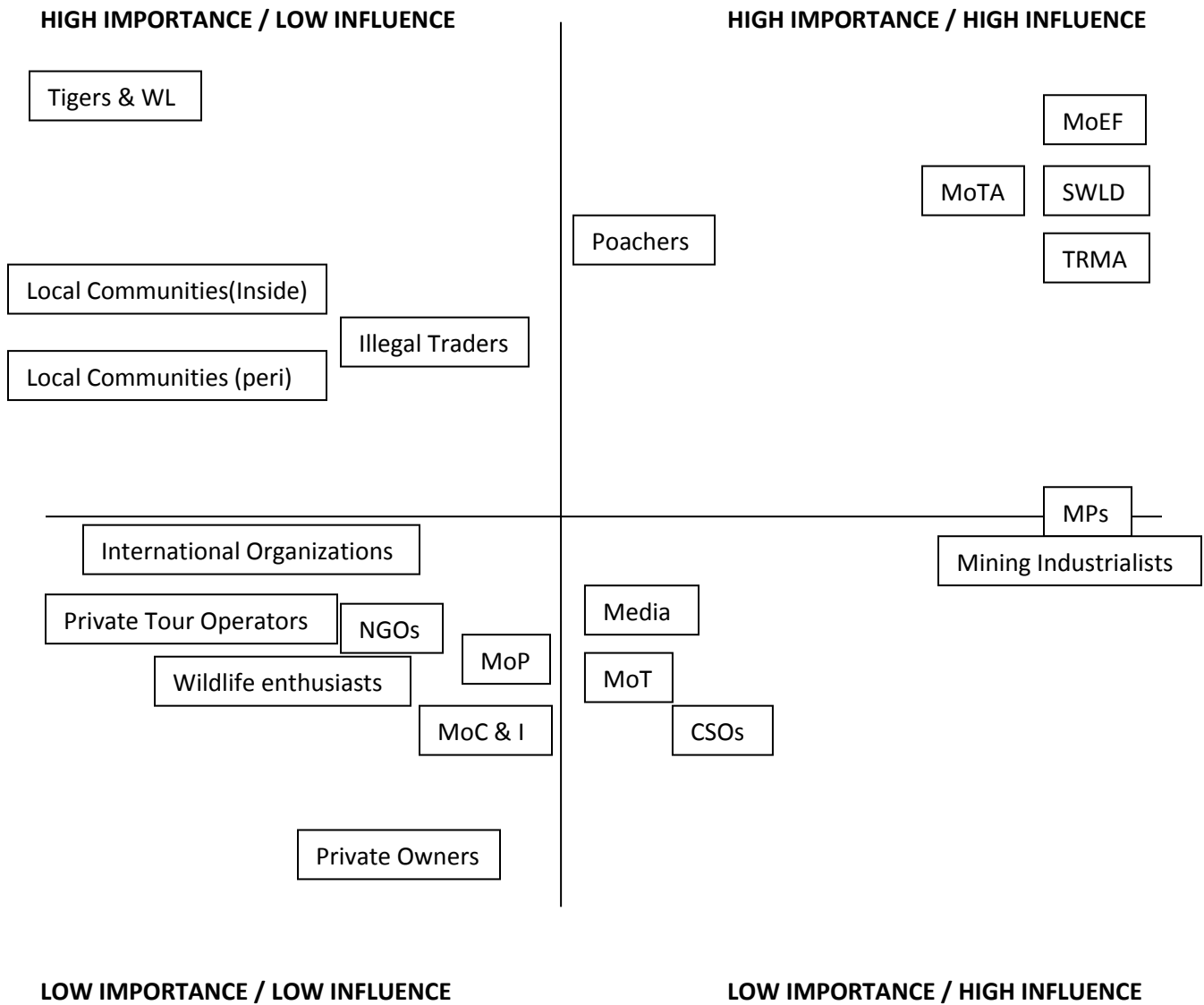


Figure 6.4 Stakeholder Influence /Importance Matrix of Tiger Conservation Strategy (2005)



In the matrix, it can be observed that some of the stakeholders like local communities both residing inside and outside the tiger reserves, which are having high importance, do not have high influence. Similarly, NGOs, who can contribute significantly for the conservation, lack influence as well as importance in the decision making processes. In an ideal situation, these categories should be given more importance through legal framework to strengthen the conservation process in a sustainable manner, through participatory approach. The Ministry of Tribal Affairs, which is in the high influence and high importance zone with a negative impact, needs to be taken into consideration and convinced of protection of rights to tribals in the settlements and its support for the programme needs to be pursued. Low importance high influence group consisting of legislative executives and mining industries need to be monitored for their approach and reactions as there is a possibility of influencing the outcome of the programme.

A brief comparison of the present status of influence and importance matrix was done with the position in 2005 (Figure 6.4). NTCA and WCCB were not introduced and the strategy involving participatory approach and detailed planning were not in place then. Accordingly, we can observe that the local communities, still with a higher importance, had very low influence and NGOs were having still lower influence and power positions. Due to the amendment and schemes brought in after 2006, the conditions have apparently improved to include these stakeholders in the decision making process though the ideal situation would still demand more inclusion through appropriate framework.

6.3 Policy Evaluation

Policy evaluation is an exercise to generate information on the significance and value of the outcomes achieved in the implementation process (Dunn 1994:340). Jann and Wegrich (2006) describe different stages of policy process which involves agenda setting that includes problem recognition and issue selection, policy formulation and decision making, implementation and evaluation. They indicate that policy evaluation may be

done at any stage in the policy cycle and the perspective can be applied to the whole policy making process (ibid:53).

The policy outcome of the 2006 amendment in terms of success in conserving tigers can be explained in many aspects. One way is to compare the population status of the tigers as estimated before (2006) the introduction of the policy, organizations and programmes and after (2010), which is shown in Table 5.4. We can observe an increase of 21 % in the population in the scientifically conducted survey in 2010, with an annual increment of around 5%, which is commendable. The population in almost all the reserves has either witnessed an increase or remains stable. And during these years, the mortalities (both natural and unnatural including seizures) annually account for less than 2% of the population. We may remember that the seizures made during these years might belong to kills made during the previous years too, before 2006.

The amendment was introduced in the context of situations where there was an urgent need to arrest the decreasing tiger population due to poaching and lack of conservation efforts. As recommended by TTF (2005), the strategy was focused on conservation efforts through participatory approach, increasing habitat areas, improving the institutional and administrative framework and preventing the crimes. NTCA is concerned with all the tasks except the crime prevention where it does not have a direct role, which is dealt by WCCB.

6.3.1 Conservation assessed by plans, population, funds and area

The policy has considerably succeeded in reorganizing the functioning of the reserves to administer their parks as per the approved plans. Through the introduction of *conservation plans*, which form the basic road map for the day to day activities and thus the entire plan of a tiger reserve, the central authority governs the state of affairs for all practical purposes. It approves specific activities and ensures allotting budget those activities. This regulatory role assumes more significance in the light of the criticisms from

audit agencies like CAG (2006:3) and teams like TTF (2006:169-170), for having no plan or ill equipped plans for the reserves. From the data collected (NTCA 2014) it is learnt that draft plans have been submitted for 43 tiger reserves, NTCA has studied and approved five and has sent its comments and observations for modification of another 37 plans. It shows that the regular and periodical activities of the reserves are getting streamlined. In the absence of these plans, as per CAG report (2006), an amount of Rs. 87.11 crore was released to 28 Tiger Reserves during the period 2002-05, of which only Rs 77.53 crore was actually utilized. After the formation of NTCA, the financial allocation has apparently increased considerably from around 62 crore rupees in 2007-08 to around 200 crore rupees in 2009-10 and in 2013-14, it is around 182 crores (NTCA 2014). The focused expenditure after approval from NTCA for specific activities appears to have improved the expenditure pattern. Wright, an eminent conservationist and Executive Director of Wildlife Protection Society of India (WPSI), comments that NTCA's initiatives in managing to get the funds for this important cause is commendable (B.Wright, personal communication, 17.08.14). The responses collected from the Field Directors during the study also endorsed the opinion.

Similarly, the policy has also succeeded in increasing the habitat area for tigers to ensure better conservation. More than 50% increase has been witnessed in the number of tiger reserves with an addition of 15 reserves to the previous list of 29 making it to 44 now. As habitat protection is key to the survival of the species (Dinerstein *et al* 2007:508), this achievement also becomes a significant one. A related achievement is the relocation of around 144 villages with more than 8000 families from the habitat areas within the short period of the policy introduction (Natarajan 2013). However, during the study, I also came across on views that the process would be more effective if the relocation efforts are outsourced to professional non-governmental organizations and professional and social workers with a more flexible compensation packages instead of the existing two-type model and in compliance with the existing Forest Rights Act, 2006 (B.Wright, Executive Director of WPSI, personal communication, 17.08.2014).

6.3.2 Evaluating the Participatory Approach

Participatory approach, which is again shown as crucial by a number of studies, receives a mixed response in our study. A brief discussion with Assistant Inspector General of NTCA (C.M. Shivakumar, personal communication, 13.08.2014) confirmed that NTCA involves state governments, NGOs and local communities in the crucial decision making processes of notification of core and buffer areas, preparation of conservation plans, and execution of plans too by involving them in protection and management. As many as 2.6 million mandays employment are being generated annually for public welfare for the cause of conservation (ibid).

While these measures constitute the direct funding by NTCA in conservation activities through employment, major part of revenue is expected to come from tourism activities, in which the local communities can have a share for their development activities. Udayasekhar (1998:346) suggests that tourism activities should be planned in consultation with local people and a share of the revenue received by tourism should go back to the communities for their welfare. Now, the revenue is collected in the foundation fund, in which the local communities are partners. It has been confirmed that though the major share of the foundation funds should be spent on community welfare works, very little is being spent in majority of the reserves and even better maintained reserves like Periyar in Kerala spend only around 40% of the amount for community welfare (C.M. Shivakumar, AIG, NTCA, personal communication, 13.08.2014). This again is due to the fact that there are no specific guidelines/frameworks on how to share the benefits with the communities. And we observe that the major tourism activities are restricted to Department or private operators. In countries like Kenya, South Africa and Zimbabwe, where wildlife tourism has been successful, a sound policy is in place involving local communities and the revenue is shared with them (Udayasekhar 1998:340). The recommendations of TTF (2005:20) also emphasize such an arrangement but it has yet failed to get shape.

Also, as we observe, the recommendations of TTF have not been implemented in the right spirit in involving the local communities in tourism

activities. As per the amended act, the objective of tiger conservation foundations (Section 38X (2)(a)) is to facilitate ecological, economic, social and cultural development of the people in the reserve areas. However, as learnt from our study, these issues have not been effectively addressed and a lot more needs to be done to find sustainable ways to share the benefits with the local communities, involving relevant government departments and NGOs in those areas where NTCA does not have expertise as suggested by the experts (B. Wright, personal communication, 17.08.2014). Shekar, Head, TRAFFIC India underlines NTCA's need for more focus and emphasis on improving the original skills of villagers to earn and sustain themselves (N. Shekar, personal communication, 24.08.2014).

The involvement of NGOs, wildlife experts and local communities in the conservation and decision making processes is another facet expected from the participatory approach in the policy. NTCA's constitution has provided for 8 members from professionals and experts in its 29 member authority, which is a fair representation. Our study gave an insight that NGOs are being involved in some important operations like tiger estimation, capacity building efforts and tiger death protocols (C.M. Shivakumar, personal communication, 13.08.2014). However, some of the popular NGOs like WWF and WPSI contradicted this assumption. S. Banerjee, former senior official of WWF (personal communication, 17.08.2014) conveyed that NGOs and local communities are not involved in the policy making process effectively and at the best NTCA obtains the opinion from a few large, national level NGOs. B. Wright, WPSI, informs that the actual involvement of NGOs, wildlife experts and local communities in the decision making process of tiger conservation is insignificant, a task which she admits, not an easy one (B.Wright, personal communication, 17.08.2014). She cites the lack of an appropriate mechanism or framework as the main drawback, for NGOs to provide periodical inputs to NTCA on important decisions, and nor NTCA seeks them keenly. The responses collected from Field Directors also indicate that there is no substantial improvement in the participatory approach.

While describing the interactive model of implementation of policy reforms, Grindle and Thomas (1991:128) reiterate that political, financial managerial and technical resources are required to keep up the reform process and policy managers should keep a bearing on the same while implementing the reform to avoid a failure. Grindle and Thomas (ibid) further explain that there is a need to be receptive for the demands perceived during the process. If we analyze the present case and fit it in that model, we can understand that the issues were well perceived and policy agenda was formulated after successfully completing the decision stages, incorporating specific policy characteristics. Now there appears to be a conflict in the public arena where there is a felt need for involvement of local communities and NGOs in the decision making processes of conservation through a legal framework. This framework must ensure sharing of benefits generated from the tourism initiatives with the communities for the local development and projects and involve wildlife NGOs, CSOs and local communities in the important decision making processes more actively.

Chapter 7

Conclusions

Conservation is a state of harmony between men and land

-Aldo Leopold

Considerable changes have been witnessed over years in the tiger conservation strategies since the commencement of tiger protection programmes which started way back in 1973 in India. Major interventions were introduced in 2006 to arrest the rapid declining rate of tiger population due to habitat loss and poaching. Our study intended to examine how far the initiatives introduced by the Government have succeeded in conserving the big cats in the sub-continent.

From the study, it is apparent that NTCA has performed convincingly in certain areas. Fund allocation and its utilization for conservation was a key area and NTCA has managed to obtain, distribute and utilize funds for its objectives during its operational period. By ensuring timely preparation, getting approval and execution of conservation plans by the tiger reserves, NTCA has succeeded largely in streamlining the protection activities of tiger reserves in the country in a uniform manner. Considering the objections raised by TTF and CAG, for lack of planning, approval and execution of conservation activities, the achievements accomplished by NTCA so far is commendable.

Habitat loss is another crucial area which needed immediate attention and in a populous country like India, this is a real challenge. NTCA has shown creditable performance by increasing the number of reserves from 29 to the present 44. This task has been associated with the relocation of more than 140 villages with more than 8,000 families in the operation period (Natarajan 2013). While appreciating this, we also observe that employing professional NGOs and social workers and introduction of flexible compensation packages can be still effective and Wright's suggestions for such a move deserves

consideration (B.Wright, Executive Director of WPSI, personal communication, 17.08.2014). As suggested by Karanth (2005a), the cost involved in the relocation has to be seen in relation to the savings done from avoiding huge expenses to be otherwise made on infrastructure like roads, power, water, communication, education and health facilities to the habitats located deep inside the reserves. Karanth (Director, WCS, personal communication 18.08.2014) also indicates that the results of relocation process were satisfactory in places where the forest officials involved revenue authorities and NGOs and further suggests that after identifying the high priority areas for relocation, the task should be entrusted to other professional agencies and NGOs for better results. We also observed in our study that another limitation in relocation process is the rigidity of the package adopted by the Government and Karanth (ibid) calls for more flexibility for certain cases, taking into consideration the value of the land and the rights and resources given up by the people proposed for relocation.

Another encouraging fact is the progress made in the efforts to bring in uniformity and objectivity in the administration and management of tiger reserves through conservation plans, which was categorically criticized by TTF (2006:169-170) and indicated by CAG (2006:4) as inconsistent with the overall objectives and management goals. Standardization of procedures and introduction of different protocols have assisted the process considerably. Regulating the tourism activities in the core areas is another significant step. As Karanth (2005b:9) also conforms to this logic stating that setting up of scientifically identified, sufficiently larger areas should remain inviolate. Interestingly, as evident from the budgetary allocation and expenditure pattern in the recent years, NTCA has also ensured focused expenditure on specific approved tasks, optimizing the outcome.

The objective evaluation boils down to the population of the tigers, the key indicator and the primary focus of the entire programme. The scientifically conducted surveys in 2010 have indicated a population of 1706 tigers against the 1411 figure in 2006, thus representing around 5% growth in the population against the 2% mortality rate per annum. This conforms to the

statement of Dinerstein *et al* (2007:508) that tiger population can recover if a national government, adequately equipped with assistance from NGOs, makes a committed and consistent effort on its conservation strategy.

However, a major area which consistently requires focus and commitment is 'involvement of local communities in active conservation and sharing of benefits' received from tourism activities and conservation efforts with them – in real terms. As B. Wright (Executive Director of WPSI, personal communication, 17.08.2014) explains, neither the development nor their livelihood issues have been effectively addressed and their involvement in major decision making processes is far from real participation. H.S. Mohanta, (former Deputy Director of Kanha National Park, personal communication, 16.08.2014) opines that the reason could be due to lack of sensitivity in the implementation process. Our study highlights that a lot needs to be done in this area to find sustainable means to allow sharing of benefits from the tourism activities and different income generating activities with the local communities. Studies have highlighted how the antagonistic local communities got transformed into conservative mode after an appropriate participatory management was adopted in Periyar tiger reserve of Kerala State (Banerjee 2012:222), benefitting both livelihoods of local communities and conservation of wildlife.

Though it is a fact that the policy provides for “ensuring the agricultural, livelihood, development and other interests of the people living in a tiger reserve” (MoEF 2006), and though our studies on governance mechanism and the stakeholders indicate improvement in the involvement of local communities in the overall governance process since 2006, it is evident from the study that ‘formulation of a solid framework with an appropriate legal back up for sharing the revenue benefits derived from the reserves with the local communities and its committed implementation in the field’ can alone ensure the real participation process. Kothari *et al* (2014) categorically claims that there is a necessity to amend the Act, making it mandatory to involve local communities in the planning and management process of protected

areas, with flexible provisions indicating the rights and activities to be carried out in the reserves.

NTCA, thus, has achieved its mandates in many facets of administration, fund management, expansion of habitats, conserving the population and in bringing in a relatively more uniform governance pattern in the tiger reserves. However, the hard point still remains that a considerable action is required to be done in participatory approach. While it is a fact that the wild tiger will in all probability survive for next fifty years, it is also true that the current status is not very encouraging and can end up with a stage of 'ecological extinction' leaving their population to a too low level to play its role as top predator in the ecosystem (Soule *et al* 2005). We have also observed the sea of change in the conservation process over decades – starting from a very centralized approach in the beginning and the dialogues were between only a few which have now taken a larger shape recognizing the need for incorporating political, cultural, economic, scientific and transnational elements, thus requiring a participatory approach. Such a multifaceted approach can ensure the survival of this wonderful species and prevent its extinction.

-o0o-

References

- Abott, K.W and D. Snidal (2009) 'The Governance Triangle' In Mattli, W and N. Woods (Eds) *The Politics of Global Regulation* Princeton, New Jersey : Princeton University Press.
- Badola, R. (1999) 'People and Protected Areas in India- Decentralization and Devolution in Forestry' *Unasylva – An International Journal of Forestry and Forest Industries*. FAO. 199 (50) Accessed 18.06.14. <[http://www.fao.org/docrep/x3030e/x3030e05.htm#people and protected areas in india](http://www.fao.org/docrep/x3030e/x3030e05.htm#people_and_protected_areas_in_india)>
- Banerjee, A. (2012) 'Is wildlife tourism benefiting Indian protected areas? A survey' *Current Issues in Tourism* 15 (3) : 211-227.
- Bijoy, C.R. (2011) 'The Great Indian Tiger Show' *Economic and Political Weekly* 46(4) : 36-41.
- Bindra, P and K.K. Karanth (2013) 'Tourism Turf Wars : Debating the Benefits and Costs of Wildlife Tourism in India' *The International Journal of Conservation* 47 (1) : 13-18.
- Chauhan, N.P.S (2011) 'Man-Eating and Cattle-Lifting by Tigers and Conservation Implications in India' paper presented at 8th Europe Vertebrate Pest Conference held in Berlin, Germany (26-30 September)
- Colebatch, H.K. (2009) *Policy* Maidenhead: Open University Press.
- Comptroller and Auditor General of India (2006) 'Conservation and Protection of Tigers in Tiger Reserves' Report No.18. Accessed 27.07.2014 <http://saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2005_2006/Civil_%20Performance_Audits/Report_no_18/tiger_reserves.pdf>
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (2014) 'Conservation of Trade in Tigers and Other Appendix

I Asian Big Cat Species : Resolution Conference 12.5 (Rev.CoP 15) Accessed 27 July 2014 <<http://www.cites.org/eng/res/all/12/E12-05R15.pdf>>

Craig, K. (2014) 'Tigers in Crisis : Trade in Tiger Parts' Accessed 26.06.2014 <http://www.tigersin crisis.com/trade_tigers.htm>

Dinerstein, E., C.Loucks, E. Wikramanayake, J.Ginsberg, E. Sanderson, J.Seidensticker, J. Forrest, G. Bryja, A. Heydlauf, S. Klenzendorf, P. Leimgruber, J. Mills, T. G. Obrien, M. Shrestha, R. Simons and M. Songer (2007) 'Fate of Wild Tigers' *BioScience* 57 (6) : 508-514.

DNA (2012) 'Government for Regulated Tourism in Tiger Reserves' 27 September. Accessed 27.07.14 <<http://www.dnaindia.com/india/report-govt-for-regulated-tourism-in-tiger-reserves-1745782>>

Dunn, W. N (1994) *Public Policy Analysis : An Introduction* 2nd Edition, Prentice Hall, Upper Saddle River. New Jersey.

Goodwin, H. A and C.W. Holloway (1978) *Red Data Book 1972* . Switzerland: IUCN, Morges.

Grindle, M.S and J.W. Thomas (1991) 'Implementing Reform : Arenas, Stakes and Resources' *Public Choices and Policy Change : The Political Economy of Reform in Developing Countries*. Baltimore : Johns Hopkins University Press.

Hyden, G. (1999) 'Governance and Reconstitution of Political Order' in *State, Conflict and Democracy in Africa* (Ed) R. Joseph, 179-97. Boulder : Rienner.

Indian Bird Conservation Network (2011) 'Wildlife Policies' *Important Bird Areas in India: A brief Account*. Accessed 01 May 2014 <http://ibcn.in/wp-content/uploads/2011/12/4-25_29-Wildlife-Policies.pdf>

International Centre For development oriented research in Agriculture (ICRA) (n.d) 'Learning Materials – Stakeholder Matrices- Guidelines' Accessed 15.08.14 <<http://www.icra-edu.org/objects/anglolearn/ACFegJqyr.pdf>>

Interpol (2011) 'Call issued to save wild Tigers from Extinction' Accessed 26.06.2014 <<http://www.interpol.int/News-and-media/News/2011/PR092>>

Interpol (2014) 'Assessment of Enforcement Responses to Tiger Crimes : Executive Summary' Environmental Security Sub Directorate, Lyon, France Accessed 27 July 2014 <www.interpol.int>

International Union for Conservation of Nature (n.d). 'IUCN Definitions – English' Accessed 19.06.2014 <http://cmsdata.iucn.org/downloads/en_iucn_glossary_definitions.pdf>

International Union for Conservation of Nature (2014) 'IUCN Red List of Endangered Species 2014.2' Accessed 27.7.14 <<http://www.iucnredlist.org>>

Jann, W and K. Wegrich (2006) 'Theories of the Policy Cycle' in F. Fisher and G. Miller(eds) *Handbook of Public Policy Analysis* London : CRC Press, Taylor and Francis, pp 43-63.

Johnsingh, A.J.T and S.P. Goyal (2005) 'Tiger Conservation in India : The Past, Present and the Future' *Indian Forester* 131 (10) : 1279-1296.

Kahn, J (2008) 'India's Missing Tigers' Big Cat Rescue Accessed 18.06.2014 <<http://bigcatrescue.org/indias-missing-tigers/>>

Kalpavriksh (2003) 'Comments on The Wildlife (Protection) Amendment Act, 2002' Accessed 18.06.2014 <http://www.kalpavriksh.org/images/LawsNPolicies/WildlifeAmendmentActKVComments_Final.pdf>

Karant, U.K. (2005a) 'Reconciling Conservation with Emancipatory Politics' *Economic and Political Weekly* XL 40 (46): 4803-05.

Karant, U.K. (2005b) 'Joining the Dots but Losing the Cats' *Cat News Autumn* (43):8-11 Accessed 18 August 2014 <http://www.earthcarefilms.com/images/filming_tiger_crisis/Reference%20Material/Articles/K_U_Karant_1.pdf>

- Karant, U. K. (2006) 'The Tiger's Retreat' *Nature* 441: 927-930 Accessed 1.8.14
<<http://www.nature.com/nature/journal/v441/n7096/full/441927a.html>>
- Kothari, A., S. Suri and N. Singh (2014) 'Conservation in India : A New Direction' *Economic and Political Weekly* 30 (43) : 2755-2766.
- Kranth, K.K., R.A. Kramer, S.S.Qian, N.L. Christen Jr (2008) 'Examining Conservation Attitudes, Perspectives and Challenges in India' *Biological Conservation*. 148 : 2357-2367.
- Leftwich, A. (1993) 'Government, Democracy and Development in the Third World' *Third World Quarterly* 14 (3) : 605-624
- Levi-Faur, D (2012) 'From "Big Government" to "Big Governance?"' in *Oxford Handbook of Governance*, Oxford: University Press. Pp : 1-16.
- Little, P.D (1994) 'The Link Between Local Participation and Wildlife Conservation : A Review of Issues and Experiences'. in Western, D., M. Wright, S. Strum (eds) *Natural Connections* pp.347-372. Washington DC. Island Press.
- Long, N (Ed) (1989) '*Encounters at the Interface : A Perspective on Social Discontinuities in Rural Development*', Wageningen Studies in Sociology, 27, Wageningen : Wageningen Agricultural University.
- Mathew, A.O., V. Kamath and L.L.R. Rodrigues (2014) 'Saving the Big Cats from Extinction – A Systems Approach to study India's Environmental Initiatives to Protect the Bengal Tigers' *International Journal of Renewable Energy and Environmental Engineering* 2 (1) : 44-52.
- McHenry, T.J.P. (1994) 'Policy and Legal Tools for the Management of Wildlife Resources' *Unasylva – An International Journal of Forestry and Forest Industries*. FAO. 175 (44) Accessed 18.06.14
<[http://www.fao.org/docrep/v1500e/v1500e0a.htm#policy and legal tools for the management of wildlife resources](http://www.fao.org/docrep/v1500e/v1500e0a.htm#policy%20and%20legal%20tools%20for%20the%20management%20of%20wildlife%20resources)>

- Menon, M (2012) 'Alarming Rise in Tiger Deaths this Year' *The Hindu* 16 June. Accessed 18.06.2014 <<http://www.thehindu.com/sci-tech/energy-and-environment/alarming-rise-in-tiger-deaths-this-year/article3537153.ece>>
- Ministry of Environment and Forests, Government of India (1993) 'Wildlife (Protection) Amendment Act, 1993' Accessed 29 November 2013 <<http://www.moef.nic.in/sites/default/files/wildlife11.pdf>>
- Ministry of Environment and Forests, Government of India (2006) 'Wildlife (Protection) Amendment Act, 2006' Accessed 01 May 2014 <<http://www.moef.nic.in/sites/default/files/WildLifeAmedmentAct2006%20.pdf>>
- Ministry of Environment and Forests (2013) 'Annual Report 2012-13' Accessed 27 July 2014 <http://www.moef.nic.in/sites/default/files/annual_report/ar-2012-13.pdf>
- Ministry of Law and Justice, Government of India (2007) 'The Constitution of India'. Accessed 18.06.14 <<http://lawmin.nic.in/coi/coiason29july08.pdf>>
- Mondol, S., K.U. Karanth and U. Ramakrishnan (2009) 'Why the Indian Sub-Continent Holds the Key to Global Tiger Recovery' *PLoS Genetics* 5 (8) : 1-9 Accessed 06 August 2014 <<http://www.plosgenetics.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pgen.1000585&representation=PDF>>
- Natarajan, J (2013) 'Relocation of Villages' Answer delivered for a Lok Sabha Question raised by B.P. Mahto, M.P. Parliament of India, N. Delhi (22 April) Accessed 09.08.2014 <<http://164.100.47.132/LssNew/psearch/QResult15.aspx?qref=139334>>
- National Tiger Conservation Authority (2014) Accessed 27 July 2014 <<http://projecttiger.nic.in>>

- Nowell K and L. Xu (2007) 'Taming the Tiger Trade : China's Markets for Wild and Captive Tiger Products since 1993 Domestic Trade Ban' Hong Kong, China: TRAFFIC East Asia.
- Nowell, K and P. Jackson (Eds) (1996) *Status Survey and Conservation Action Plan: Wild Cats* Gland, Switzerland: IUCN.
- Nurse, A. (2012) 'Repainting the Thin Green Line : The Enforcement of UK Wildlife Law' *Internet Journal of Criminology*. Accessed 01 May 2014 <http://www.internetjournalofcriminology.com/Nurse_Repainting_The_Thin_Green_Line_IJC_Oct_2012.pdf>
- Oak, V. (n.d.) 'Wildlife Protection : Legislation and Judicial Response' Accessed 18.06.14 <<http://www.legalserviceindia.com/articles/wild.htm>>
- O'Toole, L.J (2000) 'Research on Policy Implementation, Assessment and Prospects' *Journal of Public Administration Research and Theory* 19 (2) : 263-288.
- Overseas Development Administration (1995) 'Guidance Note on How to do Stakeholder Analysis of Aid Projects and Programmes' Social Development Department, ODA. London.
- Pandey, R. K. (2014) 'Role of Bawaria Gangs in Poaching of Tigers and their Linkages in Illegal Trans-boundary Wildlife Trade' Accessed 07.08.2014 <http://www.teriuniversity.ac.in/mct/pdf/new/assignment/Ramesh_Pandey_on_Bawaria_Gangs_and_Cross_border_illegal_wildlife_trade.pdf>
- Patil, N., S. Kumar and P. Bindra (2013) 'India to establish a National Database of Camera Trapped Tigers' *Fauna and Flora International, Oryx* 47(2) 169-172.
- Renard, Y., and V. Krishnarayan (2000) 'Participatory Approaches to Natural Resource Management and Sustainable Development : Some Implications for Research and Policy' Paper presented at Regional Conference

'Managing Space for Sustainable Living in Small Island Developing States'
Port of Spain, Trinidad and Tobago (16-17 October)

Sarkar, J (2011) 'Tiger Estimate, 2010' *Current Science* 101 (7) : 834-837.

Schmeer, K (1999) 'Guidelines for Conducting Stakeholder Analysis' Bethesda, MD: Partnerships for Health Reform, Abt Associates Inc. Accessed 15.08.2014

<<http://www.who.int/management/partnerships/overall/GuidelinesConductingStakeholderAnalysis.pdf>>

Seidensticker, J (2010) 'Saving Wild Tigers : A Case Study in Biodiversity Loss and Challenges' *Integrative Zoology* 5 : 285-299.

Shahabuddin, G., R. Kumar and M. Shrivastava (2007) 'Creation of Inviolable Space : Lives, Livelihoods and Conflicts in Sariska Tiger Reserve' *Economic and Political Weekly* 42 (20) : 1855-1862.

Sibanda, B. and A. Omwega (1996) 'Some Reflections on Conservation, Sustainable Development and Equitable Sharing of Benefits from Wildlife in Africa: The Case of Kenya and Zimbabwe' *South African Journal of Wildlife Research* 26 (4): 175-181.

Siddiqi N. A. and J.H. Choudhury (1986) 'Man-Eating Behaviour of Tigers (*Panthera tigris* Linn.) of the Sundarbans-Twenty Eight Years' Record Analysis Paper presented in Fifth International Snow leopard Symposium, Srinagar, India (13-15 October).

Soule, M.E. (Ed) (1986) *Conservation Biology: The Science of Scarcity and Diversity*. Sunderland, Massachusetts: Sinauer Associates

Soule M.E and J. Terborgh (1999) *Continental Conservation* Island Press, Washington DC and Covelo. California.

Soule, M.E., J.A Estes, B Miller, DL Honnold (2005) 'Strongly Interacting Species : Conservation Policy, Management and Ethics' *BioScience* (55):168-176.

Thappar, V. (2013) 'India Should Learn from African Model of Wildlife Conservation : Valmiki Thappar (Interview)' Interview of IANS by Shilpa Raina on 15 December 2013 Accessed 18.06.2014 <<http://www.firstpost.com/fwire/india-should-learn-from-african-model-on-wildlife-conservation-valmik-thapar-interview-1288341.html>>

The China Action Plan for Saving the South China Tiger – Draft Outline (n.d)

Accessed 27 July 2014

<<http://nationalzoo.si.edu/SCBI/WildTigers/participate/pdfs/China%20%20Tiger%20Action%20Plan.pdf>>

The Hindu (2014) 'India Lost 63 Wild Tigers in 2013' 2 Jan. Accessed 18.06.14

<<http://www.thehindu.com/sci-tech/energy-and-environment/india-lost-63-wild-tigers-in-2013/article5526238.ece>>

The Report of the Tiger Task Force (2005) 'Joining the Dots' Project Tiger, Union Ministry of Environment and Forests, New Delhi. Accessed 18.06.14

<http://projecttiger.nic.in/WriteReadData/PublicationFile/full_report.pdf>

Tiger Tribe (2014) 'Tiger Population' Accessed 18.07.2014

<<http://tigertribe.net/tigers-origin/tiger-population/>>

Tilson, R and P. Nyhus (Eds) (2010) *Tigers of the World : The Science, Politics and Conservation of Panthera tigris*. London, UK : Academic Press.

Turner, M. and Hulme D. (1997) 'The Policy Process : Politics and Technics. In: M. Turner and D. Hulme *Governance, Administration and Development*. London : Macmillan Press. 57-81.

Udayasekhar, N (1998) 'Crop and Livestock Depredation Caused by Wild Animals in Protected Areas : The Case of Sariska Tiger Reserve, Rajasthan, India' *Environmental Conservation* 25 (2) : 160-171.

- UNDP (1997) 'Governance for Sustainable Development – A UNDP Policy Document' Accessed 18.06.2014
 <<http://gis.emro.who.int/HealthSystemObservatory/Workshops/WorkshopDocuments/Reference%20reading%20material/Literature%20on%20Governance/GOVERN~2.PDF>>
- Varvasovszki, Z. and R. Brugha (2000) 'How to do (or not to do)... A Stakeholder Analysis' *Health Policy and Planning* 15 (3) : 338-345.
- Vasan, S (2005) 'Wildlife Conservation: Deconstructing the Public' *Economic and Political Weekly* 40 (46) : 4805-07.
- VSO (n.d) 'Participatory Approaches : A facilitator's Guide' Accessed 18.06.14
 <http://community.eldis.org/.59c6ec19/VSO_Facilitator_Guide_to_Participatory_Approaches_Principles.pdf>
- Wildlife Crime Control Bureau (2014) Accessed 07.08.2014 <wccb.gov.in>
- Wildlife Protection Society of India (2014a) 'Tiger Poaching and Illegal Wildlife Trade Investigations'. Accessed 01 May 2014 <http://www.wpsi-india.org/projects/poaching_investigation.php>
- Wildlife Protection Society of India (2014b) 'Illegal Tiger Trade : Why Tigers are Walking Gold' Accessed 01 May 2014 <<http://www.wpsi-india.org/news/14032014.php>>
- Wildlife Protection Society of India (2014c) 'Current Status of Tigers in India' Accessed 19.07.2014 <http://www.wpsi-india.org/tiger/tiger_status.php>
- World Bank (1994) 'Governance – the World Bank's Experience'. *Development in Practice*. Washington, D.C.: Accessed 18.06.2014.
 <<http://documents.worldbank.org/curated/en/1994/05/698374/governance-world-banks-experience>>
- World Wide Fund for Nature (2014) 'Global Tiger Day 2014 – Global Wild Tigers Numbers Unknown' Accessed 27 July 2014
 <<http://wwf.panda.org/?226391/GlobalTigerDay2014>>

Annexures

TABLES

Table 3.1 : Tiger Reserves and their Areas

S No	State	Tiger Reserve	Area of Core / Critical Tiger Reserve (in Km²)	Area of the buffer / peripheral (km²)	Total Area (km²)
1	Andhra Pradesh/Telangana	Nagarjunsagar	3721	2216	5937
2	Telangana	Kawal	893.23	1125.89	2019.12
3	Arunachal Pradesh	Namdapha	1807.82	245	2052.82
4	Arunachal Pradesh	Pakke	683.45	515	1198.45
5	Assam	Manas	840.04	2310.88	3150.92
6	Assam	Nameri	200	144	344
7	Assam	Kaziranga	625.58	548	1173.58
8	Bihar	Valmiki	598.45	300.93	899.38
9	Chattisgarh	Udanti-Sitanadi	851.09	991.45	1842.54
10	Chattisgarh	Achanakmar	626.195	287.822	914.017
11	Chattisgarh	Indravati	1258.37	1540.7	2799.07
12	Jharkhand	Palamau	414.08	715.85	1129.93
13	Karnataka	Bandipur	872.24	584.06	1456.3
14	Karnataka	Bhadra	492.46	571.83	1064.29
15	Karnataka	Dandeli-Anshi	814.884	282.63	1097.514
16	Karnataka	Nagarahole	643.35	562.41	1205.76
17	Karnataka	Biligiri Ranganatha Temple	359.1	215.72	574.82
18	Kerala	Periyar	881	44	925
19	Kerala	Parambikulam	390.89	252.772	643.662
20	Madhya Pradesh	Kanha	917.43	1134.361	2051.791
21	Madhya Pradesh	Pench	257.26	483.96	741.22
22	Madhya Pradesh	Bandhavgarh	716.903	820.03509	1536.938
23	Madhya Pradesh	Panna	576.13	1002.42	1578.55

24	Madhya Pradesh	Satpura	1339.264	794.04397	2133.30797
25	Madhya Pradesh	Sanjay-Dubri	812.571	861.931	1674.502
26	Maharashtra	Melghat	1500.49	1268.03	2768.52
27	Maharashtra	Tadoba-Andhari	625.82	1101.7711	1727.5911
28	Maharashtra	Pench	411.33	768.30225	1179.63225
29	Maharashtra	Sahyadri	600.12	565.45	1165.57
30	Maharashtra	Nawegaon-Nagzira	653.674	-	-
31	Mizoram	Dampa	500	488	988
32	Orissa	Similipal	1194.75	1555.25	2750
33	Orissa	Satkosia	523.61	440.26	963.87
34	Rajasthan	Ranthambore	1113.364	297.9265	1411.291
35	Rajasthan	Sariska	881.1124	332.23	1213.342
36	Rajasthan	Mukundara Hills	417.17	342.82	759.99
37	Tamil Nadu	Kalakad- Mundanthurai	895	706.542	1601.542
38	Tamil Nadu	Mudumalai	321	367.59	688.59
39	Tamil Nadu	Sathyamangalam	793.49	614.91	1408.4
40	Tamil Nadu	Anamalai	958.59	521.28	1479.87
41	Uttar Pradesh	Dudhwa	1093.79	1107.9848	2201.7748
	Uttar Pradesh	Amangarh	-	80.6	80.6
42	Uttarakhand	Corbett	821.99	466.32	1288.31
43	West Bengal	Sunderbans	1699.62	885.27	2584.89
44	West Bengal	Buxa	390.5813	367.32	757.90
Total			38632.1	29886.61	68519

(Source : NTCA 2014)

Table 4.2 : Budget Allocation of NTCA under the 12th Plan (For years 2012-13 and 2013-14)

S.No.	Budget Head	2012-13 (Million Rupees)	2013-14 (Million Rupees)
1	Assistance to States	1347	1383
2	Assistance to States for Scheduled Tribe Sub Plan	100	100
3	Assistance to States for Scheduled Caste Sub Plan	60	60
4	Assistance to North Eastern Region	160	180
5	Grant-in-Aid (NTCA)	10	70
	Total	1677	1793

(Source : NTCA 2014)

Table 5.2. Financial Assistance by NTCA to different tiger reserves during 11th Plan (Source : NTCA 2014)

Tiger Reserve	2007-08	2008-09	2009-10	2010-11	2011-12
(Rupees in lakhs)					
Nagarjunsagar	73.92	56.98	94.91	155.65	154.41
Namdhapa	30.00	136.85	14.62	96.88	75.00
Pakke	80.25	109.32	48.86	101.06	161.79
Kaziranga	0.00	306.79	165.00	1050.38	426.92
Manas	60.00	740.75	0	395.50	479.62
Nameri	35.61	44.79	21.59	63.59	40.97
Valmiki	98.32	49.67	8.00	158.36	172.19
Achanakmar	0.00	68.55	1193.5	1556.09	494.59
Indravati	35.23	49.37	42.15	50.39	106.13
Udanti-Sitanadi	0.00	51.95	103.05	207.26	102.01
Palamau	45.16	115.38	110.74	130.62	156.35
Bandipur	974.53	114.57	164.20	367.66	213.95
Bhadra	185.19	158.07	128.09	154.11	215.88
Dandeli Anshi	0.00	226.36	144.37	203.82	159.20
Nagarhole	0.00	190.85	210.82	934.47	1123.13
Biligiri Ranganth Temple	0.00	0	0	0.000	118.48
Periyar	153.24	170.35	151.8	209.33	261.57
Parambi Kulam	0.00	96.74	129.36	114.13	168.2
Bandhavgarh	499.46	1814.95	159.96	2292.13	2313.237
Kanha	270.42	1638.28	280.18	575.96	1969.67
Panna	1822.85	2108.94	175.90	390.70	284.80
Pench	220.85	169.09	158.32	236.43	191.53
Sanjay Dubri	0.00	74.51	145.84	203.45	92.67
Satpura	162.36	1192.78	1502.37	264.16	310.81

Kuno Palpur	0.00	0	0	0.00	190.00
Melghat	138.37	180.94	155.19	2137.09	973.58
Pench	71.50	71.18	75.87	102.72	280.82
Tadoba-Andheri	85.85	159.01	131.82	494.89	2320.55
Sahyadri	0.00	0	5.00	54.37	47.40
Dampa	82.90	241.45	2171.00	187.69	225.29
Satkosia	0.00	75.00	127.73	72.83	118.41
Similipal	43.28	550.99	42.35	742.46	436.67
Ranthambhore	223.45	808.86	10560	250.33	0.60
Sariska	187.23	1900.09	134.17	2118.60	66.61
KMTR	45.40	222.37	138.46	119.27	209.82
Mudumalai	0.00	243.55	51.854	269.79	191.58
Anamalai	0.00	224.89	50.25	131.73	204.56
Corbett & Tiger	202.01	462.85	241.71	339.95	399.76
Buxa	106.79	67.64	38.58	120.87	135.66
Sunderbans	201.88	160.75	259.97	381.61	22.00
Dudhwa	134.89	392.51	414.44	382.46	446.13
Total	6270.94	15473.00	20153.00	17872.50	16062.52

Table : 5.3 Details of funds released to different tiger reserves for relocation of villages during 11th plan (Source : NTCA 2014)

S No	Name of the Tiger Reserve	2007-08	2008-09	2009-10	2010-11	2011-12
		(Rupees in Lakhs)				
1	Manas (Assam)	0.00	646	0.00	0.00	0.00
2	Achanakmar (Chhattisgarh)	0.00	0.00	1000	1229	260.81
3	Nagarahole/Bandipur (Karnataka)	980.19	0.00	0.00	784.40	944.94
4	Bandhavgarh (MP)	277.3668	1580	0.00	2000.00	2100
5	Kanha (MP)	0.00	1390	3.12	140.00	1608
6	Satpura (MP)	76.00	1024.49	1035	0.00	0.00
7	Panna (MP)	1577.53	1824.63	0.00	0.00	0.00
8	Dampa (Mizoram)	0.00	0.00	2043	0.00	0.00
9	Similipal (Orissa)	0.00	350.00	0.00	610.00	0.00
10	Ranthambhore (Rajasthan)	50.00	464.00	10400	0.00	0
11	Sariska (Rajasthan)	50.00	1879.50	0.00	1860	600
12	Mudumalai (Tamil Nadu)	0.00	100.00	0.00	200.00	0.00
13	Corbett (Uttarakhand)	10.00	0.00	0.00	0.00	0.00
14	Melghat Tiger Reserve, (Maharashtra)	0.00	0.00	0.00	1886.53	739.2
15	Tadoba-Andheri (Maharashtra)	0.00	0.00	0.00	288.73	2164.14

Table 5.4 Details of Tiger estimation for the year 2006 and 2010 (Source : NTCA 2014)

State	Tiger Population						
	2006			2010			Increase/ Decrease/ Stable
	Estimate (Number)	Statistical Lower Limit	Statistical Upper Limit	Estimate (Number)	Statistical Lower Limit	Statistical Upper Limit	
Uttarakhand	178	161	195	227	199	256	Increase
Uttar Pradesh	109	91	127	118	113	124	Stable
Bihar	10	7	13	8 (-)*	(-)*	(-)*	Stable
Shivalik- Gangetic landscape	297	259	335	353	320	388	Stable
Andhra Pradesh	95	84	107	72	65	79	Decrease
Chhattisgarh	26	23	28	26	24	27	Stable
Madhya Pradesh	300	236	364	257	213	301	Stable
Maharashtra	103	76	131	169	155	183	Increase
Odisha	45	37	53	32	20	44	Stable
Rajasthan	32	30	35	36	35	37	Stable
Jharkhand	Not assessed			10	6	14	No comparison -not assessed in 2006.
Central Indian landscape	601	486	718	601	518	685	Stable
Karnataka	290	241	339	300	280	320	Stable
Kerala	46	39	53	71	67	75	Increase
Tamil Nadu	76	56	95	163	153	173	Increase
Western Ghats landscape	402	336	487	534	500	568	Increase

Assam	70	60	80	143	113	173	Increase
Arunachal Pradesh	14	12	18	Not assessed	Not assessed	Not assessed	No comparison -not assessed in 2010.
Mizoram	6	4	8	5 (-)*	(-)*	(-)*	Stable
Northern West Bengal	10	8	12	Not assessed	Not assessed	Not assessed	No comparison -not assessed in 2010.
North East Hills, and Brahmaputra landscape	100	84	118	148	118	178	Increase
Sundarbans	Not assessed	Not assessed	Not assessed	70	64	90	No comparison -not assessed in 2006..
TOTAL	1411	1165	1657	1706	1520	1909	

*Statistical lower / upper limits could not be ascertained owing to small size of the population.

(Source : NTCA 2014)

Table 5.5. Tiger Mortality from 1999 to 2014 (till May 2014) (Source : NTCA 2014)

Year	Natural deaths	Poaching and seizures	Cases under study	Total
1999	9	24	-	33
2000	1	9	-	10
2001	8	36	-	44
2002	23	36	-	59
2003	24	20	-	44
2004	17	5	-	22
2005	17	-	-	17
2006	17	5	-	22
2007	20	10	-	30
2008	22	9	-	31
2009	45	21	-	66
2010	25	28	-	53
2011	40	16	-	56
2012	29	33	27	89
2013	7	14	47	68
2014 (till 31 st May)	4	4 (skin seizures)	24	32

Table 5.6 Advisories and alerts issued by NTCA and WCCB (Source : NTCA 2014 and WCCB 2014)

Date of issue	Issued by	Subject of the advisory / alert
23.07.2008	WCCB	Ballistic evidence in wildlife offences
31.10.2008	WCCB	Illegal trade in ornamental fish
28.08.2009	WCCB	Display of wildlife items in commercial premises
2009	NTCA	Generic guidelines for preparation of security plans for tiger reserves
25.05.2010	WCCB	Profile of Wildlife criminals
12.08.2010	NTCA	Regulations on tourism in tiger reserve areas
April 2012	NTCA	Protocol for Phase IV monitoring of tigers
27.04.2012	NTCA	Special drive for anti-poaching activities
21.05.2012	NTCA	Reporting of tiger deaths
09.09.2012	WCCB	Stop monetary valuation of wildlife articles
06.09.2011	NTCA	Protocol on conservation of the Royal Bengal Tiger of the Sunderbans between the Governments of India and Bangladesh
26.09.2012	WCCB	Illegal use of wildlife animals in laboratories / museums of schools and colleges
30.01.2013	NTCA	Protocols for the establishment of a national repository of camera trap photographs of tigers
30.01.2013	NTCA	Standard Operating Procedure for dealing with tiger death
30.01.2013	NTCA	Standard Operating Procedure for dealing with emergency arising due to straying of tigers in human dominated landscapes

18.03.2013	NTCA	Standard Operating Procedure for disposal of tiger carcass and body parts
13.01.2014	NTCA	Spread of Canine Distemper Virus on tigers
22.04.2014	WCCB	Guidelines in respect of booking of animals and birds (Wild otherwise) by Indian Railways

(Source : WCCB 2014 and NTCA 2014)

Table 6.4 Stakeholder Analysis on Indian Tiger Conservation Strategy

Category of Stake Holder	Relevant Stake Holders	Primary or Secondary	Interests (Both overt and hidden)	Impact of Conservation Efforts on interests	Influence or power to facilitate or impede conservation	Importance / Priority given
Government (Policy makers and Implementing Agencies)	Ministry of Environment and Forests	Primary	<ul style="list-style-type: none"> •Protection of Tiger species and its population •Protection of Forest land and other wildlife •Protection of biodiversity •Sustained maintenance of tiger genetic pool •Peaceful coexistence of tigers and humans •Establishing an appropriate legal framework for wildlife management •Sustenance of communities 	Positive	<ul style="list-style-type: none"> • Lobbying • Executive and legislative support • Research • Technical expertise • Resources 	High
	National Tiger Conservation Authority	Primary	<ul style="list-style-type: none"> •Protection of tigers and its genetic base •Livelihood of local communities •Protection of ecosystem •Protection of habitat for tiger 	Positive	<ul style="list-style-type: none"> • Resources • Resource allocation • Research • Technical 	High

			<p>management</p> <ul style="list-style-type: none"> •Awareness and education of conservation practices •Stopping crimes against tigers •Bringing in uniformity in the tiger management system 		<p>expertise</p> <ul style="list-style-type: none"> • Lobbying 	
	Wildlife Crime Control Bureau	Primary	<ul style="list-style-type: none"> •Protection of tigers against the crimes •Strengthening the legal framework against the poachers •Identifying and arresting the organized gangs involved in wildlife crimes •Encouraging anti-poaching activities among communities •Strengthening the existing enforcement set up in reserves through capacity building in investigation, intelligence collection and prosecution processes •Improving the forensic facilities to enable detection and prevention of crimes •Improving the legal consultancy to ensure proper prosecution of offences 	Positive	<ul style="list-style-type: none"> •Resources • Technical expertise • Research • Lobbying 	High
	State Wildlife	Primary	<ul style="list-style-type: none"> •Maintenance of sustained population of 	Positive	<ul style="list-style-type: none"> •Resources 	High

	Departments		<p>tigers in their States</p> <ul style="list-style-type: none"> • Improve the ecosystem and forests • Upholding the image of the State in the national and international level in tiger protection • Employment opportunities and livelihood for the villages and communities in and around the tiger reserves 		<ul style="list-style-type: none"> • Technical expertise • Research • Lobbying • Resource allocation 	
	Tiger Reserve Management	Primary	<ul style="list-style-type: none"> • Protection of tigers in their reserves • Increase the number of tigers till manageable levels • Providing a better services for the tourists visiting the reserves • Livelihood of villages and local communities living inside and in the periphery of the tiger reserves • Managing the man-animal conflicts amicably and resolving them quickly • Prevention of operation of any wildlife criminal gangs in their jurisdiction. • Providing employment opportunities to local communities in the form of 	Positive	<ul style="list-style-type: none"> • Resources • Technical expertise • Lobbying • Research 	High

			<p>ecotourism, eco development centres and other facilities</p> <ul style="list-style-type: none"> •Revenue from tourism activities for the development of reserve and communities 			
	Ministry of Tribal affairs	Secondary	<ul style="list-style-type: none"> •Protection of rights of tribals living in and around the tiger reserves •Protecting the livelihood resources and opportunities for the tribals and settlements in the tiger reserve areas 	Negative / Positive	<ul style="list-style-type: none"> • Lobbying against and in support of the strategy 	Medium-High
	Ministry of Tourism	Secondary	<ul style="list-style-type: none"> •Promotion of tourism activities •Revenue in terms of local currency and foreign exchange 	Positive	<ul style="list-style-type: none"> • Lobbying in support of the strategy 	Low
	Ministry of Power	Secondary	<ul style="list-style-type: none"> • Establishment of power projects 	Negative	<ul style="list-style-type: none"> • Lobbying 	Low
	Ministry of commerce and industries	Secondary	<ul style="list-style-type: none"> • Establishment of industries 	Negative	<ul style="list-style-type: none"> • Lobbying 	Low
	Legislative Members representing tribals and local communities	Secondary	<ul style="list-style-type: none"> •Rights of local communities and tribal people in the tiger reserves 	Negative	<ul style="list-style-type: none"> • Lobbying 	Medium

Local Communities	Communities Inside the Tiger Reserves	Primary	<ul style="list-style-type: none"> •Protection of rights to access resources •Protection of livelihood means •Employment opportunities through conservation project Schemes •Access to facilities and public goods •Protection of tigers as a source of their income through tourism activities •Man animal conflicts •Sustained use of forests and resources 	Positive / Negative	<ul style="list-style-type: none"> • Support and resist the strategy depending upon clauses 	High
	Communities in the periphery of the Tiger Reserves	Primary	<ul style="list-style-type: none"> •Access to resources •Employment opportunities through tourism and related activities •Man animal conflicts •Access for livelihood resources from forests •Access to public amenities and public goods •Sustained use of forests and its resources 	Positive and Negative	<ul style="list-style-type: none"> • Support and resist the strategy depending upon clauses 	High
Non Governmental	Wildlife NGOs	Secondary	<ul style="list-style-type: none"> •Protection of tigers from extinction •Protection of ecosystem 	Positive	<ul style="list-style-type: none"> • Research • Lobbying 	Medium-High

Organizations			<ul style="list-style-type: none"> •Protection of other wildlife •Protection of Biodiversity •Control of organized wildlife criminal gangs and poachers •Maintenance of a viable and sustained genetic base of tigers • Sustained use of forest resources •Research studies on tigers •Awareness and education of people on conservation •Transparency in government functioning 		<ul style="list-style-type: none"> • Technical expertise • Resources – technical and financial 	
	CSOs representing Forest dwellers rights	Secondary	<ul style="list-style-type: none"> •Protection of civil rights of local communities •Protection of access rights of tribals to resources in forests 	Negative	<ul style="list-style-type: none"> • Resisting the conservation efforts 	Medium
International Organizations	CITES, INTERPOL, Research Institutions, UN Agencies.	Secondary	<ul style="list-style-type: none"> •Prevention of trade in tiger articles at international level •Protection of tiger species from extinction •Stopping the activities of international wildlife criminal gangs. 	Positive	<ul style="list-style-type: none"> • Lobbying • Research • Resource allocation • Resources 	Medium

			<ul style="list-style-type: none"> • Effective implementation and cooperation for all the conservation efforts of international communities 			
Private Sector	Tour Operators	Secondary	<ul style="list-style-type: none"> • Profit • Public image 	Positive and Negative	<ul style="list-style-type: none"> • Support and resist the strategy depending upon clauses 	Low
	Owners of Hotels and facilities near Tiger Reserves	Secondary	<ul style="list-style-type: none"> • Profit • Public image 	Positive and Negative	<ul style="list-style-type: none"> • Support and resist the strategy depending upon clauses 	Low
	Mining industrialists	Primary	<ul style="list-style-type: none"> • Mining operations in the forest areas • Profit 	Negative	<ul style="list-style-type: none"> • Lobbying through some sectors of the government 	Low
	Poachers	Primary	<ul style="list-style-type: none"> • Poaching and trafficking • Profit 	Negative	<ul style="list-style-type: none"> • Expertise in poaching • Expertise in tiger ecology and habits • Network 	High
	Illegal traders	Primary	<ul style="list-style-type: none"> • Trafficking both domestic and international markets 	Negative	<ul style="list-style-type: none"> • Organized networks in illegal trades 	High

			<ul style="list-style-type: none"> • Profit 		creating demand	
	Wildlife enthusiasts	Secondary	<ul style="list-style-type: none"> • Protection of tigers and wildlife • Protection of habitats, ecosystem and biodiversity • Protection of sustainable tiger population and genetic base • Control of all wildlife criminal gangs 	Positive	<ul style="list-style-type: none"> • Lobbying • Finance • Research • Expertise 	Low -Medium
Media	Print and Electronic Media	Secondary	<ul style="list-style-type: none"> • News coverage • Public image • Profit 	Uncertain	<ul style="list-style-type: none"> • Publicity • Resources 	Medium
Wildlife	Tigers and other wildlife	Primary	<ul style="list-style-type: none"> • Survival from extinction • Maintenance of a sustainable and viable genetic base 	Positive	<ul style="list-style-type: none"> • Passive role 	High

