

Management Effectiveness Evaluation (MEE) of Tiger Reserves (TRs) in India

2017-2018

TECHNICAL MANUAL



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1. Introduction

Protected Areas (PAs) face many challenges to their integrity which, unless addressed can undermine the very objectives for which they were established. Those responsible for the conservation and management of PAs have the complex task of anticipating and dealing with these challenges, most often in an environment of limited financial and organizational capacity. It is therefore important that we invest in the efforts in the most critical areas to ensure that available resources are applied to their maximum effectiveness.

2. Management Effectiveness

In recent years there has been a growing concern amongst protected area professionals and the public that many protected areas are failing to achieve their objectives and, in some cases, are actually losing the values for which they were established (Hockings *et al* 2008). As a result, improving the effectiveness of protected area management has become a priority throughout the conservation community. One important step in this process is the carrying out of an assessment of current status and management of the protected area, to understand better what is and what is not working, and to plan any necessary changes as efficiently as possible. Assessment of management effectiveness has emerged as a key tool for protected area managers and is increasingly being required by governments and international bodies. For example, the Convention on Biological Diversity (CBD) Programme of Work for Protected Areas (agreed in February 2004) calls on all State Parties to implement management effectiveness assessments for at least 30% of their protected areas by 2010.

In response to these initiatives, work on management effectiveness assessment has become an increasingly common component of protected area management worldwide. India has also made a beginning in evaluating the management effectiveness of its national parks, wildlife sanctuaries and tiger reserves (Mathur, 2008). The Project Tiger had conducted the management effectiveness assessment of 28 tiger reserves in 2006 (http://projecttiger.nic.in/Report-2_EvaluationReportsofTRinIndia.pdf) and the results of this assessment were peer-reviewed by the IUCN (http://projecttiger.nic.in/Report-1_ReviewofTRAssessmentReport.pdf). In 2010-2011, the National Tiger Conservation Authority (NTCA) with technical backstopping of the Wildlife Institute of India carried out an independent evaluation of all 39 tiger reserves in the country (Mathur et al, 2011, http://www.wii.gov.in/tiger_reports). In 2014-15, NTCA and WII conducted MEE of 43 tiger reserves (http://www.wii.gov.in/release_mee_tiger_report_2014). The MOEFCC and WII have also conducted MEE of 125 National Parks and Wildlife Sanctuaries in the country (http://www.wii.gov.in/release_of_mee_report). Evaluations have now been

undertaken in over 6,000 protected areas and the pace of this work is accelerating (Fiona Leverington *et al*, 2008). International organizations working with protected areas such as IUCN and its World Commission on Protected Areas (WCPA), the World Bank, the Global Environment Facility as well as NGOs such as WWF and The Nature Conservancy have taken a lead in both promoting the importance of management effectiveness as an issue, and in providing the technical development and support needed to underpin this effort.

Assessments should not primarily be about reporting on or judging either their managers and/or the frontline staff. As important as reporting requirements are, the assessment of management effectiveness should primarily be used to assist managers to work as effectively as possible.

Monitoring threats and activities affecting a PA and using the results to manage for challenges, threats and pressures is increasingly seen as being at the core of good PA management. Assessments help managers and stakeholders reflect on their experience, allocate resources efficiently, and plan for effective management in relation to potential threats and opportunities.

3. What is a Management Effectiveness Assessment?

Protected area management effectiveness evaluation is defined as the assessment of how well protected areas are being managed – primarily, whether they are protecting their values and achieving agreed goals and objectives. The term ‘management effectiveness’ reflects three main themes of protected area management:

- Design issues relating to both individual sites and protected area systems;
- Adequacy and appropriateness of management systems and processes;
- Delivery of protected area objectives including conservation of values.

The precise methodology used to assess effectiveness differs between protected areas, and depends on factors such as the time and resources available, the importance of the site, data quality and stakeholder pressures. The differing situations and needs for protected areas thus require different methods of assessment. As a result, a number of assessment tools have been developed to guide and record changes in management practices.

A uniform theme to these assessments has been provided by the IUCN World Commission on Protected Areas (WCPA) Framework for Assessing the Management Effectiveness of Protected Areas (see Figure 1 for more information), which aims both to give overall guidance in the development of assessment systems and to encourage basic standards for assessment and reporting.

4. The WCPA Framework for Assessing Management Effectiveness

The WCPA Framework sees management as a process or cycle with six distinct stages, or elements:

- it begins with establishing the context of existing values and threats
- progresses through planning
- allocation of resources (inputs)
- as a result of management actions (process)
- eventually produces goods and services (outputs)
- that result in impacts or outcomes.

Of these elements, the outcomes most clearly indicate whether the site is maintaining its core values, but outcomes can also be the most difficult element to measure accurately. However, the other elements of the framework are all also important for helping to identify particular areas where management might need to be adapted or improved.



Figure 1: The WCPA Framework for Assessing Management Effectiveness.

Note: For more information on the WCPA framework see: Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. 2006. Evaluating Effectiveness: A framework for assessing management of protected areas, (2nd edn) World Commission on Protected Areas, IUCN, Gland, Switzerland. The framework can be downloaded from: <http://www.iucn.org/themes/wcpa/pubs/guidelines.htm#effect2>

5. Assessment Process

All 50 Tiger Reserves (TRs) have been grouped in 5 landscape clusters and will be covered under the MEE process (**Annexure-I**). In order to ensure credibility of the assessment process, 5 Independent Expert MEE Committees have been constituted (**Annexure-II**). A Wildlife Institute of India (WII) team will provide the technical backstopping to the MEE process (**Annexure-III**). Considering the growing importance of addressing issues relating to Climate Change, Carbon Capture, preventing Carbon Loss and encouraging further Carbon Capture in Tiger Reserves two additional criteria have been developed (**Annexure-IV**). These criteria will not be included in the formal MEE of TRs but the information gathered will help to sensitize the conservation community about the significance of these issues and to plan next steps for addressing them.

The Independent Expert MEE teams will visit all 50 TRs for conducting MEE as per the prescribed assessment criteria and complete the MEE Score Card. All efforts will be made to ensure that the 3 member Independent Expert MEE teams visit the tiger reserves together. At the end of the site visit, an interaction will be organized with Site Managers and his representatives to discuss the findings of the evaluation and to seek additional information/ clarifications. The Site Manager may also make a written submission to the team. The Chairman of the respective committees will send the report through email to the Wildlife Institute of India with a copy to the NTCA, once the MEE of a TR in the assigned cluster has been completed. In addition to the site reports the Chairman will also send a 2-page report on each site covering – (a) Management Strengths; (b) Management Weaknesses; and (c) Immediate Actionable Points.

It is possible that in some TRs, there may not be any villages inside. In such cases Headline Indicator 4.6 should not be marked or taken into account. Similarly, if NGOs are not active in any TR then Headline Indicator 3.5 should not be marked or taken into account.

The logistics for the MEE team visits will be handled by NTCA and the respective Field Directors of the Tiger Reserves. Once the site visits have been completed and the results have been compiled, a meeting of the Evaluation Teams, Site Managers and WII representatives will be organized to share the findings of the evaluation.

6. Assessment Criteria

For assessment of each of the six elements of the MEE Framework, 31 criteria have been developed for MEE of tiger Reserves in India. Explanatory notes for '*Criteria*', wherever needed, have been provided to guide the assessment process. Against each '*Criteria*' the evaluation team should indicate '*Reference document(s)*' and also provide '*Remarks*', as appropriate. The scores by themselves will not help in providing the complete picture unless supported by considered observations (remarks) that qualify such scores. This is very important for the NTCA, the field managers concerned, the future of the tiger and associated species, the local people and ecosystems. The Independent MEE Team will also submit a two page note on each site in their cluster describing (a) Management Strengths; (b) Management Weaknesses; and (c) Immediate Actionable Points.

The WII-NTCA MEE team would continue to work on the issue of using '*quantitative*' headline indicators based on the experience gained during M-STrIPES implementation. Outcomes from the on-going M-STrIPES implementation in tiger reserves will be taken into account appropriately and in cases where these available in order to have more objectivity in the MEE process. The issue of assigning '*differential weightages*' to some of the headline indicators including '*normalization*' would also be examined by the WII-NTCA-MEE team.

1. Context

1.1 Are the values of the TR well documented, assessed and monitored?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Values not systematically documented, assessed and monitored.	Poor			
Values generally identified but not systematically assessed and monitored.	Fair			
Most values systematically identified, assessed and monitored.	Good			
All values systematically identified, assessed and monitored.	Very good			

1.2 Are the threats to TR values well documented and assessed*?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Threats not systematically documented or assessed.	Poor			
Threats generally identified but not systematically assessed.	Fair			
Most threats systematically identified and assessed.	Good			
All threats systematically identified and assessed.	Very good			

*This assessment should be based on number, nature and extent of threats

1.3 Is the 'Core Area' of TR free from human and biotic interference*?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
The 'Core Area' has extensive human and biotic interference.	Poor			
The 'Core Area' has some human and biotic interference.	Fair			
The 'Core Area' has little human and biotic interference.	Good			
The 'Core Area' has no human and biotic interference.	Very good			

*This assessment should be based on existence and the efforts made by TR management to address issues related to human settlements/ villages inside the core area; livestock grazing, cultivation, encroachments etc, resource extraction/ livelihood dependence of local communities and should reflect the overall interference due to all the above factors.

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

1.4 Has the TR complied with the four Statutory* Requirements (SR) along with Tripartite MoU and all (seven) Standard Operation Procedures (SOP)?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
None of the four SR, no compliance of Tripartite MoU and seven SOPs met	Poor			
Two of the four SR, 50% conditions of the Tripartite MoU and SOPs complied	Fair			
Three of the four SR, 75% conditions of the Tripartite MoU and SOPs complied	Good			
All four SR, 100% conditions of the Tripartite MoU and SOPs complied	Very good			

*Statutory requirements are (1) Legal delineation and notification of Core and Buffer Areas; (2) Establishment of Tiger Conservation Foundation; (3) Development of a Tiger Conservation Plan; and (4) Constitution of a State-level Steering Committee under the Chairmanship of the Chief Minister. TA refers agreement between Field Director, State Government and NTCA. The 7 SOPs are on (i) Straying of Tiger in human dominated landscape, (ii) Tiger Mortality and (iii) Disposal of Carcasses, (iv) Dealing with orphaned/abandoned tiger cubs and old injured/tigers, (v) Active Management towards rehabilitation of tigers from source areas at the landscape level, (vi) Dealing with tiger depredation on livestock and (vii) Interstate Coordination for Interstate TR. Interstate SOP (SOP No. vii) may not be applicable to all tiger reserves and the team needs to assess accordingly.

1.5 Is the 'Core' and 'Buffer' of the Tiger Reserve under unified management of Field Director?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Management of Core and Buffer of the TR are under different management	Poor			
Management of Core is under Field Director of TR but Buffer is under partial control	Fair			
Management of Core and Buffer is under full administrative control of the Field Director of TR	Good			
Management of Core and Buffer is under full administrative and financial control of the Field Director of TR	Very Good			

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

2. Planning

2.1 Status of Tiger Conservation Plan (TCP)*?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No TCP in place.	Poor			
TCP is under preparation	Fair			
TR has a relevant TCP	Good			
TR has a comprehensive and relevant TCP, duly approved by the NTCA	Very good			

**The scientific content and the participatory processes used in preparation of the TCP will be taken into account in assessing the quality of TCP.*

2.2 Does the TR safeguards the threatened biodiversity values*?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
TR does not safeguard the threatened biodiversity values.	Poor			
TR safeguards a few threatened biodiversity values.	Fair			
TR safeguards a large number of threatened biodiversity values.	Good			
TR safeguards all threatened biodiversity values.	Very good			

**Remarks need to elaborate on the kind of safeguards and how they work or are intended to work*

2.3 Are stakeholders given an opportunity to participate in planning process?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Little, if any opportunity for stakeholder participation in planning.	Poor			
Stakeholders participate in some planning.	Fair			
Stakeholders participate in most planning processes.	Good			
Stakeholders routinely and systematically participate in all planning processes.	Very good			

**The result of participation must show in the field and not merely reported as a routine exercise.*

**Score: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

2.4 Are habitat management programmes systematically planned, relevant and monitored, and contribute effectively to Tiger and other endangered species conservation?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Habitat management programmes are entirely adhoc.	Poor			
Limited planning and monitoring programmes are in place for habitat management.	Fair			
Habitat management programmes are generally planned and monitored.	Good			
Habitat management programmes are thoroughly planned and monitored.	Very good			

**This assessment should be primarily based on habitat management programmes in relation to habitats for species that are threatened (IUCN categories), are habitat specialists, subjected to seasonal movements, wide ranging with emphasis on the breeding and rearing habitat and may include factors such as food, water, shelter (all connotations). Habitat structure, composition, unique patches of vegetation and sensitive sites, sources of water and their distribution are integral. Corridors within buffer zone are critically important. For example, all riparian habitats. Have these been addressed? Is there a planning process in place? The management practices dealing with invasive species such as Lantana sp., Mikania sp. etc. would be examined.*

2.5 Does the TR has an effective Protection Strategy (PS)* and Security Plan and Security Audit (SA) in place?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
TR has little or no PS and SA.	Poor			
TR has an adhoc PS and SA.	Fair			
TR has a generally relevant PS and SA but is not very effective.	Good			
TR has a comprehensive and very effective PS and SA.	Very good			

**This assessment takes inter-alia into account the nature of threats, the number and location of patrolling camps and foot and mobile patrolling, needs that relate to available manpower, terrain difficulties, practicability of area coverage, readiness to contain specific threats with necessary support and facilities. The constitution and functioning of Special Tiger Protection Force (STPF), Number of offences reported, arrests made, prosecution initiated and conviction achieved will be taken into account.*

**Score: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

2.6 *Has the TR been effective in the mitigation of human-wildlife conflicts?*

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Human-wildlife conflicts are significant but poorly addressed.	Poor			
TR has been able to mitigate few human-wildlife conflicts.	Fair			
TR has been able to mitigate many human-wildlife conflicts.	Good			
TR has been effective in mitigating all human-wildlife conflicts.	Very good			

**The assessment will take into account the number of incidences reported and payment of compensation made and its timeliness.*

2.7 *Is the TR integrated into a wider ecological network/ landscape following the principles of the ecosystem approach?*

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
TR not integrated into a wider network/ landscape.	Poor			
Some limited attempts to integrate the TR into a network/ landscape.	Fair			
TR is generally quite well integrated into a network/ landscape.	Good			
TR is fully integrated into a wider network/ landscape.	Very good			

**Assessment needs to consider the scope of opportunities on the landscape scale that exist. Consider whether any attempts have been made and what are these? Have all the important corridors been identified? What actions are planned/implemented for their security? Have the Forest Working Plans and Forest Development Corporation Plans within the identified landscapes taken cognizance of such new requirement? These should have been reflected in TCPs. Is there is any effort to rationalize landuse around TR? Is any effort being made to plan and use 'Smart Green Infrastructure'?*

** Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

3. Inputs

3.1 Are personnel adequate, well organized and deployed with access to adequate resources in the Tiger Reserve (TR)*?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Few, personnel explicitly allocated but poorly supported for TR management.	Poor			
Some personnel explicitly allocated for TR management but not adequately supported and systematically linked to management objectives.	Fair			
Some personnel with fair support explicitly allocated towards achievement of specific TR management objectives.	Good			
Adequate personnel appropriately supported and explicitly allocated towards achievement of specific TR management objectives.	Very good			

**This assessment should inter-alia be based on number of personnel allocated for attainment of TR objectives at the Range, Round, Beat and Patrolling camps levels or as relevant to the needs (sanctioned posts vis- a- vis existing personnel and needs beyond the sanctioned strengths. It is possible that posts have last been sanctioned several years back that do not now account for the current needs)*

3.2 Are resources (vehicle, equipment, building etc.) adequate, well organized and managed with desired access?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Few, if any, resources explicitly allocated for TR management.	Poor			
Some resources explicitly allocated for TR management but not systematically linked to management objectives.	Fair			
Some resources explicitly allocated towards achievement of specific TR management objectives.	Good			
Adequate resources explicitly allocated towards achievement of specific TR management objectives.	Very good			

**These form a variety of resources. These may be segregated into immovable (structures) and movable categories and each further may be considered under the essential and desirable categories. It is best to start with what are the minimum needs to attain each objective, what is available and manner of use/deployment. The proportions of the 'essentials' and 'desirables' along the importance gradient of objectives would serve as pointers for score categories. Specific remarks would be vitally important.*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

3.3 Are financial resources other than those of the State linked to priority actions and are funds adequate, released timely and utilized?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Resource allocation is adhoc, funds are inadequate and seldom released in time and not utilized.	Poor			
Some specific allocation for management of priority action. Funds are inadequate and there is some delay in release, partially utilized.	Fair			
Comprehensive planning and allocation that meets the most important objectives. Generally funds released with not much delay and mostly utilized.	Good			
Comprehensive planning and allocation of resources for attainment of most objectives. Funds generally released on-time and are fully utilized.	Very good			

**Obtain details of funds released by NTCA and their utilization by TR in the last 3 years and indicate them under 'Remarks'. This should also include Tiger Conservation Foundation. Further comment on the problems associated with fund allocations and their utilization too.*

3.4 Are financial resources from the State linked to priority action and funds adequate, timely released and utilized for the management of Tiger Reserve?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Resource allocation is adhoc, funds are inadequate and seldom released in time and not utilized.	Poor			
Some specific allocation for management of priority action. Funds are inadequate and there is some delay in release, partially utilized.	Fair			
Comprehensive planning and allocation that meets the most important objectives. Generally funds released with not much delay and mostly utilized.	Good			
Comprehensive planning and allocation of resources for attainment of most objectives. Funds generally released on-time and are fully utilized.	Very good			

**Obtain details of funds released by State and their utilization by TR in the last 3 years and indicate them under 'Remarks'. Also comment on the problems associated with fund allocation and their utilization.*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

3.5 What level of resources are provided by NGOs?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
NGOs contribute nothing for the management of the TR.	Poor			
NGOs make some contribution to management of the TR but opportunities for collaboration are not systematically explored.	Fair			
NGOs contributions are systematically sought and negotiated for the management of some TR level activities.	Good			
NGOs contributions are systematically sought and negotiated for the management of many TR level activities.	Very good			

4. Process

4.1 Does the TR have manpower resources trained in wildlife conservation for effective TR management?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No trained officers and frontline staff in the TR.	Poor			
Some trained officers and few trained frontline staff, posted in the TR.	Fair			
All trained officers and fair number of trained frontline staff posted in the TR.	Good			
All trained officers and most of the trained frontline staff is posted in the TR.	Very good			

**Indicate % of trained staff in various categories such as Diploma, Certificate Course, Vertical Integration training, MoEFCC sponsored trainings in wildlife management etc. The number and thematic areas of the 'Internal Training' programmes organized in the TR in the last 3 years may be taken into account. Has the TR prepared a 'Staff Development Plan'? Is it being implemented?*

4.2 Is TR staff management performance linked to achievement of management objectives?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No linkage between staff management performance and management objectives.	Poor			
Some linkage between staff management performance and management objectives, but not consistently or systematically assessed.	Fair			
Management performance for most staff is directly linked to achievement of relevant management objectives.	Good			
Management performance of all staff is directly linked to achievement of relevant management objectives.	Very good			

***Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10**

4.3 Is there effective public participation in TR management* and does it show in making a difference?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Little or no public participation in TR management.	Poor			
Opportunistic public participation in some of the relevant aspects of TR management.	Fair			
Systematic public participation in most of the relevant aspects of TR management.	Good			
Comprehensive and systematic public participation in all important and relevant aspects of TR management.	Very good			

**The involvement of NGOs/ NGLs in population estimation may be taken into account)*

4.4 Is there a responsive system for handling complaints and comments* about TR management?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Ad-hoc approach to handling complaints.	Poor			
Complaints handling system operational but not responsive to individual issues and with limited follow up.	Fair			
Coordinated system logs and responds effectively to most complaints.	Good			
All complaints systematically logged in coordinated system and timely response provided with minimal repeat complaints.	Very good			

**Does the TR maintains 'Suggestions Register'? What actions are taken to deal with suggestions?*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

4.5 Does TR management addresses the livelihood issues* of resource dependent communities, especially of women?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No livelihood issues are addressed by TR management.	Poor			
Few livelihood issues are addressed by TR management.	Fair			
Substantial livelihood issues are addressed by TR management.	Good			
Livelihood issues of resource dependent communities especially of women are addressed effectively by TR managers.	Very good			

**The number of man-days generated in the last 3 years may be taken into account. Are funds received from District Agencies and other sources? Provide details of funds received in last 3 years.*

4.6 Has the TR planned and implemented the voluntary 'Village Relocation' from the Core/ Critical Tiger Habitat (CTH)?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No planning and no implementation	Poor			
Plans have been made but no implementation	Fair			
Plans have been made and some implementation is in progress	Good			
Plans have been made and are being actively implemented/ no human habitation in the CTH	Very good			

**Assessment will look into the village relocation planning process including availability of manpower, financial resources and NGO support, if any. Is there a mechanism to address the complaints received in respect of relocation process? Effort must be made to assess post-relocation success or otherwise.*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

5. Output

5.1 Is adequate information on TR management publicly available?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Little or no information on TR management publicly available.	Poor			
Publicly available information is general and has limited relevance to management accountability and the condition of public assets.	Fair			
Publicly available information provides detailed insight into major management issues and condition of public assets.	Good			
Comprehensive reports are routinely available in public domain on management and condition of public assets.	Very good			

5.2 Are visitor services and facilities appropriate and adequate?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Visitor services and facilities do not exist.	Poor			
Visitor services and facilities are very basic.	Fair			
Visitor services and facilities are monitored from time to time and are fairly effective.	Good			
Visitor services and facilities are conscientiously maintained, regularly upgraded and monitored for visitor satisfaction	Very good			

**Include the existence and quality of visitor and interpretation centers, including skills and capabilities of personnel manning these, TR related publications, films, videos; arrangements of stay (including places serving refreshments and food owned and managed by TR), watch towers and hides including safety factors, vehicles assigned for visitors including riding elephants, if any and their deployment, drinking water, rest rooms, garbage disposal, attended and self guided services in the field, visitor feed back on the quality of wilderness experience.*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

5.3 Are research/ monitoring related trends systematically evaluated and routinely reported and used to improve management?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Little or no systematic evaluation or routine reporting of trends.	Poor			
Some evaluation and reporting undertaken but neither systematic nor routine.	Fair			
Systematic evaluation following phase IV guidelines and routine reporting of trends undertaken.	Good			
Systematic evaluation following phase IV guidelines and comprehensive reporting of trends undertaken and attempts made at course corrections as relevant.	Very good			

**Not all TRs attract projects and researchers and with exceptions, little research takes place on the TRs own steam because of systemic limitations. However, monitoring of some critical issues is expected e.g. population of tiger, co-predators and prey with insights into their demography and distribution (some opportunistic sampling by sightings, signs and spatial distribution during assessment would be extremely useful in terms of expert impression and as a pulse), monitoring incidence of livestock grazing, fires, weeds, sources of water, a variety of illegal activities typically associated with the reserve, wildlife health (e.g. epidemics, immunization of livestock) regeneration and change in vegetation, visitors and their activities, offence cases, ex-gratia payments etc. Efforts must be made to assess the planning and implementation of Phase-IV monitoring protocols and the success of implementation of M-STRIPES (wherever applicable). Are the 'Sykes and Horill' monitoring plots maintained and data analyzed?*

5.4 Is there a systematic maintenance schedule and funds in place for management of infrastructure/assets?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No systematic inventory or maintenance schedule.	Poor			
Inventory maintenance is adhoc and so is the maintenance schedule.	Fair			
Systematic inventory provides the basis for maintenance schedule but funds are inadequate.	Good			
Systematic inventory provides the basis for maintenance schedule and adequate funds are made available.	Very good			

***Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10**

6. Outcomes

6.1 Are populations of threatened species declining, stable or increasing?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Populations of key threatened/ endangered species are declining.	Poor			
Some threatened/ endangered species populations declining, some are increasing, most others are stable.	Fair			
Several threatened/ endangered species populations increasing, most others are stable.	Good			
All threatened/ endangered species populations either increasing or stable.	Very good			

**This needs to practically relate to the natural ecosystem potential rather than being driven merely by numbers and visibility. The assessment score may be elaborated under remarks.*

6.2 Is the population of tigers showing a declining, stable or increasing trend?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Population of tiger is showing a declining trend	Poor			
Population of tiger is showing a declining trend and the reason is identified and options to reverse are in place	Fair			
Population of tiger is showing a stable trend but below carrying capacity	Good			
Population of tiger is stable at carrying capacity or showing an increasing trend and surrounding landscape, core area addresses tiger dispersal appropriately	Very good			

**This assessment should be based in the context of available population estimate (2014-15) and the outcomes of the currently ongoing Phase-IV analyses.*

**Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10*

6.3 Have the threats* to the TR being reduced/ minimized? Or is there an increase?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Threats to the TR have not abated but have enhanced.	Poor			
Some threats to the TR have abated, others continue their presence	Fair			
Most threats to the TR have abated. The few remaining are vigorously being addressed	Good			
All threats to the TR have been effectively contained and an efficient system is in place to deal with any emerging situation	Very good			

***Does the TR has a Disaster Risk Management Plan to deal with existing as well as emerging threats?**

6.4 Is visitor management* appropriate?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Tourism management is entirely adhoc.	Poor			
Tourism management and monitoring programmes are described in plan but poorly implemented.	Fair			
Tourism management plan is good and well monitored.	Good			
Tourism management plan is good and well monitored with innovative ways of engaging and educating tourists.	Very good			

***Visitor management followed NTCA guidelines of evaluation of carrying capacity for tourism**

6.5 Are local communities supportive of TR management?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Local communities are hostile.	Poor			
Some are supportive.	Fair			
Most locals are supportive of TR management.	Good			
All local communities supportive of TR management.	Very good			

***There could be many reasons for disenchantment. It could be real because of managerial neglect or the managerial efforts could be appropriate but there could be local elements/organizations who would like to keep the disaffection simmering for their own ulterior motives. Likewise, success could be entirely because of the efforts of managers or they might be fortunate in striking partnerships with credible NGOs. Assessment may take the prevailing causes into account.**

***Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10**

7. MEE Score Card*

Framework Element Number	Framework Element Name	Number of Criteria (a)	Maximum Mark per question (b)	Total (a x b)	Marks obtained for the Element	Overall MEE Score and % age
1.	Context	05	10	50		
2.	Planning	07	10	70		
3.	Inputs	05	10	50		
4.	Process	06	10	60		
5.	Outputs	04	10	40		
6.	Outcomes	05	10	50		
Total		32		320		

*Efforts will be made by the NTCA-WII-MEE Team to address the issue of assigning 'differential' weightages to the 32 Assessment Criteria including 'normalization'.

8. References

Fiona Leverington, Marc Hockings and Katia Lemos Costa, 2008. Management effectiveness evaluation in protected areas: Report for the project '*Global study into management effectiveness evaluation of protected areas*', The University of Queensland, Gatton, IUCN WCPA, TNC, WWF, AUSTRALIA.

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Mathur, V.B. 2008. *Management Effectiveness Evaluation (MEE) of Protected Areas Network in India: Recent Experiences*. Secretariat of the Convention on Biological Diversity (2008). Implementation of the CBD Programme of Work on Protected Areas: Progress and Perspectives. Abstracts of Poster Presentations at the Second Meeting of the Ad Hoc Open-ended Working Group on Protected Areas, 11–15 February, 2008 in Rome, Italy Technical Series no. 35, 106 pages.

Mathur, V.B., R. Gopal, S.P. Yadav and P.R. Sinha 2011. *Management Effectiveness Evaluation (MEE) of Tiger Reserves in India: Process and Outcomes*. National Tiger Conservation Authority, Government of India, p 97 <http://projecttiger.nic.in> and http://wiienviis.nic.in/userlogin.aspx?Page=MEE%20TR%20Report_2011.pdf&file=pdf.

Landscape Clusters for Independent Management Effectiveness Evaluation of Tiger Reserves

S. No.	Cluster	Name of Tiger Reserve	State	Name of the Landscape
1.	Cluster-I (13 Nos.)	Dudhwa	Uttar Pradesh	SG
2.		Pilibhit	Uttar Pradesh	SG
3.		Corbett	Uttarakhand	SG
4.		Rajaji	Uttarakhand	SG
5.		Sariska	Rajasthan	CI & EG
6.		Ranthambhore	Rajasthan	CI & EG
7.		Mukundara Hills	Rajasthan	CI & EG
8.		Melghat	Maharashtra	CI & EG
9.		Pench	Maharashtra	CI & EG
10.		Tadoba-Andhari	Maharashtra	CI & EG
11.		Sahyadri	Maharashtra	CI & EG
12.		Bor	Maharashtra	CI & EG
13.		Navegaon-Nagzira	Maharashtra	CI & EG
14.	Cluster -II (9 Nos.)	Bandhavgarh	Madhya Pradesh	CI & EG
15.		Satpura	Madhya Pradesh	CI & EG
16.		Kanha	Madhya Pradesh	CI & EG
17.		Panna	Madhya Pradesh	CI & EG
18.		Pench	Madhya Pradesh	CI & EG
19.		Sanjay -Dubri	Madhya Pradesh	CI & EG
20.		Udanti-Sitanadi	Chhattishgarh	CI & EG
21.		Indravati	Chhattishgarh	CI & EG
22.		Achanakmar	Chhattishgarh	CI & EG
23.	Cluster -III (7 Nos.)	Similipal	Odisha	CI & EG
24.		Satkosia	Odisha	CI & EG
25.		Valmiki	Bihar	CI & EG
26.		Palamau	Jharkhand	CI & EG
27.		NSTR	Andhra Pradesh	CI & EG
28.		Kawal	Telangana	CI & EG
29.		Amrabad	Telangana	CI & EG
30.	Cluster -IV (11 Nos.)	Bandipur	Karnataka	WG
31.		Nagarhole	Karnataka	WG
32.		Bhadra	Karnataka	WG
33.		Biligiri Ranganatha Swamy Temple	Karnataka	WG
34.		Kali	Karnataka	WG
35.		Periyar	Kerala	WG
36.		Parambikulam	Kerala	WG
37.		Sathyamanglam	Tamil Nadu	WG
38.		Mudumalai	Tamil Nadu	WG
39.		Annamalai	Tamil Nadu	WG
40.		Kalakad-Mundanthurai	Tamil Nadu	WG
41.	Cluster -V (10 Nos.)	Oranga	Assam	NE & BF
42.		Nameri	Assam	NE & BF
43.		Manas	Assam	NE & BF
44.		Kaziranga	Assam	NE & BF
45.		Pakke	Arunachal Pradesh	NE & BF
46.		Namdapha	Arunachal Pradesh	NE & BF
47.		Kamlang	Arunachal Pradesh	NE & BF
48.		Buxa	West Bengal	NE & BF
49.		Sundarbans	West Bengal	NE & BF
50.		Dampa	Mizoram	NE & BF

SG : Shivalik- Gangetic Plain Landscape Complex

CI & EG : Central Indian Landscape Complex and Eastern Ghats Landscape Complex

WG : Western Ghats Landscape Complex

NE & BF : North East Hills & Brahmaputra Flood Plains and Sundarbans Landscape Complex

Committees for Independent Management Effectiveness Evaluation of Tiger Reserves

S. No.	Cluster	Name of Tiger Reserve	State	Name of the Landscape	Chairperson	Members
1.	Cluster-I (13 Nos.)	Dudhwa	Uttar Pradesh	SG	Shri Suhas Kumar, Former PCCF (Wildlife), Madhya Pradesh	Dr. Samir K. Sinha, Wildlife Trust of India, Bihar
2.		Pilibhit	Uttar Pradesh	SG		
3.		Corbett	Uttarakhand	SG		
4.		Rajaji	Uttarakhand	SG		
5.		Sariska	Rajasthan	CI & EG		
6.		Ranthambhore	Rajasthan	CI & EG		
7.		Mukundara Hills	Rajasthan	CI & EG		
8.		Melghat	Maharashtra	CI & EG		
9.		Pench	Maharashtra	CI & EG		
10.		Tadoba-Andhari	Maharashtra	CI & EG		
11.		Sahyadri	Maharashtra	CI & EG		
12.		Bor	Maharashtra	CI & EG		
13.		Navegaon-Nagzira	Maharashtra	CI & EG		
14.	Cluster -II (9 Nos.)	Bandhavgarh	Madhya Pradesh	CI & EG	Dr. Yogesh, Former CWLW, Arunachal Pradesh	Dr. Dipankar Ghosh, WWF-India, New Delhi
15.		Satpura	Madhya Pradesh	CI & EG		
16.		Kanha	Madhya Pradesh	CI & EG		
17.		Panna	Madhya Pradesh	CI & EG		
18.		Pench	Madhya Pradesh	CI & EG		
19.		Sanjay -Dubri	Madhya Pradesh	CI & EG		
20.		Udanti-Sitanadi	Chhattishgarh	CI & EG		
21.		Indravati	Chhattishgarh	CI & EG		
22.		Achanakmar	Chhattishgarh	CI & EG		
23.	Cluster -III (7 Nos.)	Similipal	Odisha	CI & EG	Shri R.N. Mehrotra, Former PCCF (Wildlife), Rajasthan	Shri V. Joseph, WWF-India, New Delhi
24.		Satkosia	Odisha	CI & EG		
25.		Valmiki	Bihar	CI & EG		
26.		Palamau	Jharkhand	CI & EG		
27.		NSTR	Andhra Pradesh	CI & EG		
28.		Kawal	Telangana	CI & EG		
29.		Amrabad	Telangana	CI & EG		
30.	Cluster -IV (11 Nos.)	Bandipur	Karnataka	WG	Shri B.K. Patnaik, Former CWLW, Odisha	Shri Rathin Barman, Wildlife Trust of India, Assam
31.		Nagarhole	Karnataka	WG		
32.		Bhadra	Karnataka	WG		
33.		Biligiri Ranganatha Swamy Temple	Karnataka	WG		
34.		Kali	Karnataka	WG		
35.		Periyar	Kerala	WG		
36.		Parambikulam	Kerala	WG		
37.		Sathyamanglam	Tamil Nadu	WG		
38.		Mudumalai	Tamil Nadu	WG		
39.		Annamalai	Tamil Nadu	WG		
40.		Kalakad-Mundanthurai	Tamil Nadu	WG		
41.	Cluster -V (10 Nos.)	Oranga	Assam	NE & BF	Shri B.K. Singh, Former CWLW, Karnataka	Dr. D.S. Srivastava, Former Professor, Patna University
42.		Nameri	Assam	NE & BF		
43.		Manas	Assam	NE & BF		
44.		Kaziranga	Assam	NE & BF		
45.		Pakke	Arunachal Pradesh	NE & BF		
46.		Namdapha	Arunachal Pradesh	NE & BF		
47.		Kamlang	Arunachal Pradesh	NE & BF		
48.		Buxa	West Bengal	NE & BF		
49.		Sundarbans	West Bengal	NE & BF		
50.		Dampa	Mizoram	NE & BF		

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WII Faculty and Technical Staff for Technical Backstopping of Independent Management Effectiveness Evaluation of Tiger Reserves

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2. Dr. G.S. Rawat, Dean
3. Dr. Y.V. Jhala, Scientist-G
4. Shri Qamar Qureshi, Scientist-G
5. Dr. Nasim Ahmad, Project Associate

S. No.	Cluster	Name of Tiger Reserve	State	Name of the Landscape	WII Faculty Member
1.	Cluster-I (13 Nos.)	Dudhwa	Uttar Pradesh	SG	Shri Vinod D.K.
2.		Pilibhit	Uttar Pradesh	SG	
3.		Corbett	Uttarakhand	SG	
4.		Rajaji	Uttarakhand	SG	
5.		Sariska	Rajasthan	CI & EG	
6.		Ranthambhore	Rajasthan	CI & EG	
7.		Mukundara Hills	Rajasthan	CI & EG	
8.		Melghat	Maharashtra	CI & EG	
9.		Pench	Maharashtra	CI & EG	
10.		Tadoba-Andhari	Maharashtra	CI & EG	
11.		Sahyadri	Maharashtra	CI & EG	
12.		Bor	Maharashtra	CI & EG	
13.		Navegaon-Nagzira	Maharashtra	CI & EG	
14.	Cluster -II (9 Nos.)	Bandhavgarh	Madhya Pradesh	CI & EG	Shri Ajay Srivastava
15.		Satpura	Madhya Pradesh	CI & EG	
16.		Kanha	Madhya Pradesh	CI & EG	
17.		Panna	Madhya Pradesh	CI & EG	
18.		Pench	Madhya Pradesh	CI & EG	
19.		Sanjay -Dubri	Madhya Pradesh	CI & EG	
20.		Udanti-Sitanadi	Chhattishgarh	CI & EG	
21.		Indravati	Chhattishgarh	CI & EG	
22.		Achanakmar	Chhattishgarh	CI & EG	
23.	Cluster -III (7 Nos.)	Similipal	Odisha	CI & EG	Dr. Manoj Nair
24.		Satkosia	Odisha	CI & EG	
25.		Valmiki	Bihar	CI & EG	
26.		Palamau	Jharkhand	CI & EG	
27.		NSTR	Andhra Pradesh	CI & EG	
28.		Kawal	Telangana	CI & EG	
29.		Amrabad	Telangana	CI & EG	
30.	Cluster -IV (11 Nos.)	Bandipur	Karnataka	WG	Shri Salvador Lyngdoh
31.		Nagarhole	Karnataka	WG	
32.		Bhadra	Karnataka	WG	
33.		Biligiri Ranganatha Swamy Temple	Karnataka	WG	
34.		Kali	Karnataka	WG	
35.		Periyar	Kerala	WG	
36.		Parambikulam	Kerala	WG	
37.		Sathyamanglam	Tamil Nadu	WG	
38.		Mudumalai	Tamil Nadu	WG	
39.		Annamalai	Tamil Nadu	WG	
40.		Kalakad-Mundanthurai	Tamil Nadu	WG	
41.	Cluster -V (10 Nos.)	Oranga	Assam	NE & BF	Dr. Pratap Singh
42.		Nameri	Assam	NE & BF	
43.		Manas	Assam	NE & BF	
44.		Kaziranga	Assam	NE & BF	
45.		Pakke	Arunachal Pradesh	NE & BF	
46.		Namdapha	Arunachal Pradesh	NE & BF	
47.		Kamlang	Arunachal Pradesh	NE & BF	
48.		Buxa	West Bengal	NE & BF	
49.		Sundarbans	West Bengal	NE & BF	
50.		Dampa	Mizoram	NE & BF	

Assessment Criteria for addressing issues relating to Climate Change & Carbon capture in the Tiger Reserves (TRs)

1. Additional Criteria on Climate Change: Is the TR being consciously managed to adapt to climate change?

Condition	Category*	(Tick ✓)	Comment/ Explanation	Next Steps
There have been no efforts to consider adaptation to climate change in management	Poor			
Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans	Fair			
Detailed plans have been drawn up about how to adapt management to predicted climate change, but these have yet to be translated into active management.	Good			
Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented	Very good			

2. Additional Criteria on Climate Change: Is the TR being consciously managed to prevent carbon loss and to encourage further carbon capture?

Condition	Category*	(Tick ✓)	Comment/ Explanation	Next Steps
Carbon storage and carbon dioxide capture have not been considered in management of the TR	Poor			
Carbon storage and carbon dioxide capture have been considered in general terms, but has not yet been significantly reflected in management	Fair			
There are active measures in place to reduce carbon loss from the TR, but no conscious measures to increase carbon dioxide capture	Good			
There are active measures in place both to reduce carbon loss from the TR and to increase carbon dioxide capture	Very good			

***Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10**

