

Technical Expert Group Meeting Report Review on Sumatran Tiger Project Implementation

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Background

- Population Tiger Sumatra (*Panthera tigris Sumatra*) decreased about 50% in four decade last .
- Need intervention conservation holistic and integrated that can ensure Tiger Sumatra could life by sustainable .
- Four landscape priority have total population Tiger *viable* Sumatra, Gunung Leuser, Kerinci Seblat, Berbak-Sembilang and Bukit Barisan Selatan.
- Program “ *Transforming Effectiveness of Biodiversity Conservation in Priority Sumatran Landscapes* ”, with 10% increase in population Tiger Key Performance Indicators .

Components of Sumatran Tiger Monitoring

- POPULATION DYNAMICS
Change population : increase or drop indicator population , factor (drivers) internal and external
- ANALYTICAL THINKING
Experience , Skills , Expertise , scientific minded
- SUPPORTING CONDITIONS
Regulations , Policies , Budgets , Networks Work , Awards , Acknowledgments
- TOOLS AND TECHNIQUES
Development method , tool , technology balanced mastery tools (HR) and regulations

Learning / Lessons Learned

Population Parameters

- a. Absolute Abundance: Number of individuals in specific population inside a region
- b. Age Structure: Difference of class age to estimate projection continuity population
- c. Density: Amount individual in one unit space (example: number of plankton/liter)
- d. Sex Ratio: Comparison of gender (male - female) for continuity population

- e. Fertility: Comparison of female productive, birth and proportion with population (%)
- f. Death: percentage of dead individuals with population (%)

Box 1. Learning from Case Sikhote -Alin, Russia

- Population inventory repeated for 46 years (1966-2012);
- Growth high in early period, sloping in the middle and decreasing in end period.
- Sex-ratio upside down, smaller when growth of population rising.
- Estimate reasons of drop population: hunting (tiger and prey), extreme natural condition , and disease .
- Conclusion:
 - (i) low growth population, though prey abundant,
 - (ii) abundance of prey does not ensure the population growth high,
 - (iii) slow growth whereas rate of depreciation very fast,
 - (iv) up and down can caused factor natural, most important knowing why population goes up/ down, and
 - (v) knowing factors that influence #(iv) and
 - (vi) doing step of best intervention

General review on Sumatran Tiger Project Monitoring

- (1) In general, program has not been involved yet by active parties (especially private sector that manages the concession area).
- (2) this program not yet include areas outside the conservation area, as it becomes part from landscape Tiger
- (3) In implementation of tiger monitoring in one landscape, need to know the optimum population in landscape with consider aspect of ecological and social.
- (4) Need realized that fluctuations / dynamics of tiger density in one landscape certain occur from time to time, because many influencing factors of high / low density, such as abundance animal prey when the study was conducted, the intensity activity community inside the forest, incident forest disaster and land fires, as well as climate factors / weathers
- (5) In the peat forest, camera trap monitoring should be done in the dry season, because the logistics easier, in drought season will normal. In wet season / rainy usually lots of area inside peat forest flooded and will result in more difficult in determine station for installation of camera traps.
- (6) The Sumatran Tiger Monitoring Guidebook (2017) have been piloting in Kerinci Seblat NP, Way Kambas NP, Bukit Tiga Puluh NP, and Kutai NP. It is well reported, and the NP staff's capacity have improved.

Data Collection and Analysis

Need maintained

- (7) Strengthen capacity manager area in monitoring population Tiger with use Sumatran Tiger Monitoring Guidebook (2017)

- (8) Mainstreaming population indicators in management project and area
- (9) Monitoring intensity increases during the project so that accelerate knowledge enhancement
- (10) The combined team formation among national Park and partners speed up the knowledge transfer process.
- (11) Budget sharing between DIPA and partner funds strengthen commitment of National Parks in activities implementation
- (12) Accumulation of knowledge from technical team relative no changed in 5 years
- (13) Standardized in methods , procedures and work mechanisms
- (14) Annual monitoring performance (data series)
- (15) Continuity of on the job training monitoring team

Need repaired

- (16) Not the existence of a technical expert team for monitoring tigers , so that the data analysis parameters between landscape different .
- (17) Project duration is short for observe dynamics population
- (18) Deadline of reporting time is narrow, so that time for analysis is limited
- (19) " Possible " there is a gap between work done with population status Tiger
- (20) A number of factor urgent not yet intervened through this project (example fire forest in TNBS)
- (21) Not agreed yet on the method for proofing conservation efforts of the tiger density Tiger
- (22) Not formation guidance and or technical expert team in monitoring tigers , so that the data analysis parameters between landscape different .
- (23) Scheduling a little complicated for accommodate 3 monitoring sites with notice condition weather and equipment .
- (24) Funding resources limited to accommodate all activity
- (25) Different funding sources capacity amongst landscapes
- (26) Need good equipment's
- (27) Sufficient funds
- (28) Need more staffs who wants to work in the field
- (29) Risk of work accidents in the field

Learning Monitoring Aspect

- (30) Population tigers in IPZ and Langkat could categorized as small population (< 20 individuals) so that could experience high fluctuation as the consequence of change demographics structure in short time period
- (31) Detection of lower tiger compared to the previous survey
- (32) Shifting of home range area take effect to detection
- (33) Shifting of home range area could cause by decreasing of deer occupancy as the main feed, territorial area change between individual , and decreasing of rain

Recommendations

Felids and Futures. Ch 29: Felid futures: crossing disciplines, borders, and generations. Macdonald & Loveridge, 2014. The Ecology of Wild Felids, Oxford University Press

1. NATURAL BENCHMARK: Bookmark natural traits of nature, rate extinction Indicators, counting what we have and what will lost, restoration.
2. DUAL SPECIES (MULTI SPECIES): Unite all (types) of animals (especially carnivores) through science , building corridor genetics , meta population
3. BUILDING NETWORKS: Business up to local community level, ensuring data and information related conservation are available
4. MULTI DISCIPLINE: For formulate solutions; Involving other disciplines: sociology , anthropology , economics , It's time open self

Question for the future

How many tigers that (should) exist in nature?

A. Recommendations (policy & management)

1. strengthening and enrichment regulation related Inventory Area Potential and monitoring population priority wildlife: revision _ Minister of Environment and Forestry regulations regarding TSL inventory and Perdirjen KSDAE No. 10/2016 and 11/2017 especially chapter related to data analysis and development;
2. perfect rule national for build database system , facilitating data analysis & development with add Article 3 letter (d) and additional explanation in Director General of KSDAE No. 13/2018 data review and development .
3. build a science-hub and create knowledge together: grow attitude collaborative assertiveness; strengthen system education and training with dynamic curriculum.

B. Recommendations (soft skills)

4. Science hub: empirical based knowledge, intermediate resources, experiential wisdom; (<https://www.forestdigest.com/detail/903/policy-conservation-based-science>)
5. Pool of knowledge: expertise & knowledge, open, collaborative & collaborative, creative knowledge together.
6. International outlook: learning, achievement, competence international , global language (data, mathematics , English language)
7. Embrace new discoveries: wildlife management 4.0 (5.0?), innovative , stubborn.

C. Recommendation General

8. Strengthening support of stakeholders in the landscapes (private sector, community and local government) in effort of Tiger conservation
9. Reduce 3 monitoring sites in TNBS by incorporate Berbak-Sembilang site monitoring and move resources to locations outside the area.
10. Joint database development
11. Replication various initiative good already developed like village care conflict, CTAP database, SMART etc, on less managed landscape.

12. Involve experts/ independent institutions / or universities for supervision/control in data analysis, in order to reduce bias from project implementer and area manager`
13. Investment to local CSOs and youth for tiger conservation program development
14. Tiger Conservation project developed with consider habitat reduction factors (forest fires and encroachment), not only individual factors (conflict and hunting).
15. Tiger habitat restoration for increase viability in core habitat
16. Continue and strengthen anti- poaching patrol and investigation on illegal trading
17. Expand Tiger's home-range with involving manager of areas around the tiger 's core habitat
18. More careful in deal with conflict for reduce taking individual from natural
19. Development science through invest in young scientists
20. The duration of the project should be at least 1 cycle of Tiger reproduction
21. The need to gather alternative funding for maintenance or purchase new tools outside from the main funding
22. The need to buy new equipment for keeping a good quality of Tiger population monitoring data
23. routine training to increase the team's physical and mental stamina to be ready to conduct a survey in the field heavy
24. For security of camera trap, every camera be equipped with camouflage box
25. Required assistance and improvement capacity by routine for the field staffs, capacity in composing project, implementation monitoring, as well as data analysis
26. Comparative study for UPT/park office staffs to other NPs that have monitoring programs Tiger
27. Regarding new tools like sound recorder, need expanded range recording
28. Agreement on uniform method of determination analysis
29. Consistency implementation of monitoring with standardized tool
30. Replication of the same process in one landscape
31. Existing monitoring site to be maintained
32. 4 components main must available: funding sustainability, collaboration, mentoring, and improvement capacity

D. Strengthening Monitoring Aspect

33. Determine the optimal time interval for monitoring
34. Advanced studies related to demographic parameters of Sumatran Tiger
35. Increase human resources capacity to be skilled and consistent in do survey and population analysis
36. Increase involvement of active UPT staff in the survey process, start from planning, implementation, data analysis, and reporting
37. Importance to understanding aspect of strong population ecology, so that manager area could translate results analysis be a strategy in management aspect of area and population
38. Importance to make activity monitoring population as priority for UPT / KSDAE, so that Budget allocation and HR become priority.

39. Importance to develop tiger database for accommodate series individuals' data throughout Sumatra

E. Recommendation Strengthening Aspect Protection and Law Enforcement

40. Increase capacity in technical implementation of patrol team, including systematic data collection and processing , based on needs area management .
41. Strengthen effective policies of cross ministries
42. Ensure to accommodate activity protection of tigers in the RPJP, RENSTRA, and RPJPN, in order to become base of adequate funding from the state budget.
43. Ensure Resort profile becomes reference manager area in designing strategy protection .
44. Increase investment on strengthening capacity for support effort law enforcement related wildlife crime.
45. Crime wildlife is multidimensional so that prevention effort and treatment need collaboration from various party.
46. Strengthen effort preemptive for prevent illegal activities inside tiger area /habitat, including effort to prevent hunting and other forestry crime

F. Conservation Program Recommendations Tiger

47. Involving areas outside of Conservation Areas becomes part of Tiger landscape inhabited
48. Programs that involve “real” parties in a landscape, start from planning up to share role in implementation
49. Help the parties in develop BMP SOPs and encourage / assist the parties to implement the BMP. For this needed there will be an institution that plays a role as landscape facilitator
50. Push local government in budgeting for mitigation human-Tiger conflict

G. Population Improvement /Maintaining Tiger

51. Need information on the ideal population (carrying capacity) in a landscape, because every landscape certain different carrying capacity
52. To secure the landscape and prevent the human-tiger conflict
53. To realized that fluctuations / dynamics of tiger density in one landscape certain occur from time to time, because many factors influencing high / low density, such as abundance of preys when the study was conducted, the intensity activity of community inside the forest, incident of forest and land fires, as well as climate factors / weathers
54. Require data on individual Tiger quantity as well as demographic structures (number of adult males, adult female, cubs and juveniles) to see population health.
55. Enhancement population preferably in areas with low tiger occupancy (sink) because have lots of empty area, with hope that with various interventions (specially to secure area and prevention of illegal activities) then the areas are empty in the core area will filled back by tiger.

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